Vol. III

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1938

No. 76

THE MAYTAG COMPANY, PETITIONER,

vs.

HURLEY MACHINE COMPANY AND ELECTRIC HOUSEHOLD UTILITIES CORPORATION

No. 77

THE MAYTAG COMPANY, PETITIONER,

vs.

EASY WASHING MACHINE CORPORATION

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT

PETITION FOR CERTIORARI FILED JUNE 1, 1938.

CERTIORARI GRANTED FEBRUARY 6, 1939.

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DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE

To all persons to whom these presents shall come, Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of the File Wrapper and contents, in the matter of the

Letters Patent of

Everard F. Snyder, Assignor, by Mesne Assignments, to The Maytag Company.

Number 1,866,779, Granted July 12, 1932,

for

Improvement in Washing Machines.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this seventeenth day of August, in the year of our Lord one thousand nine hundred and thirty-two and of the Independence of the United States of America the one hundred and fifty-seventh.

Attest:

Chief of Division

Thomas E. Robertson
Commissioner of Patents

1079

568158

Ser. 2725

186677

PATENT NO.

DATED JUL 12 1932

GEAR'S BOOK 213 - 1

Name GEORGE L. BEYER,

Address The Maytag Company, of Newton, Iowa, a Corp. of Delaware

of NEWTON,

State of IOWA,

Invention

WASHING MACHINES

ORIGINAL

APPLICATION FILED COMPLETE JUNE 14 1922

Petition, Specification, Oath, Power &c. 20, JUNE 14 1922

3 sheets Drawings,

RENEWED

Examined and passed for Issue June 11, 1932

64 Claims Ser. Div. 25

Notice of Allowance June 11 1932

Final Fee $25 Issue June 21 1932

Attorney WALLACE R. LANE MADISON BLDG. CHICAGO ILL.

Associate Attorney

Division of Appl. No.

Renew'd and passed for Issue

Ser. No.

Notice of Allowance

Final Fee

No. of Claims Allowed 39 Print Claim 1

Title as Allowed Washing Machine

In O. G. Class 259, 101

LAW OFFICE OF
PARKINSON & LANE

MARQUETTE BUILDING
CHICAGO

June 12th, 1922.

JUN 14 1922

Hon. Commissioner of Patents,
Washington, D.C.

Sir:-

Enclose find the application papers of Howard F. Snyder, for patent on Washing Machines, together with three sheets of drawing, and check for twenty dollars ($20.00), to cover Government filing fees.

Very truly yours,

Wallace R. Lane
Jr.

LLB-JO.
Encl.

10½

1081

MAIL ROOM
JUN
19
1922

PETITION

To the Honorable Commissioner of Patents:

Your petitioner Howard F. Snyder

a citizen of the United States residing at Hanlon

in the County of Jasper State of Iowa

whose Post Office Address is % The [illegible] Company, Hanlon, Iowa,

prays that Letters Patent may be granted to him for

WASHING MACHINES

as set forth in the annexed Specification.

And he hereby appoints Wallace R. Lane, of Chicago, Illinois, Registration No. 4988, his Attorney, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the Patent and to transact all business in the Patent Office connected therewith.

Signed at Hanlon in the County of Jasper and State of Iowa this 16 day of June 1922

Inventor's Full Name Howard F. Snyder

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:-

Be It Known That I, Howard F. Maxon, a citizen of the United States, residing at Newton, Iowa, have invented certain new and useful improvements in

WASHING MACHINES

of which the following is a specification.

The present invention relates to a power driven washing machine and more particularly to the construction of the gyrator or impeller and tub thereof and the gyrator or impeller operating mechanism for such machine.

Among the objects of the invention is to provide a novel construction designed to wash and thoroughly cleanse clothes, fabrics and various similar materials of all kinds, which is equally efficient in washing fabrics, and other similar materials of a very delicate nature, that may have become frail and weak owing to aging, wear and otherwise. Among such delicate materials are included fine laces, nettings, veils, fine silks, lace curtains and various other articles. Very often valuable articles, relics, heirlooms and other objects of great value are composed partly or wholly of fine and frail textures, such that they cannot be easily washed when soiled, since their nature would not permit subjecting them to the rigors of the ordinary washing machine operation, or even washing by hand. By my invention, the washing and cleansing of such objects is not only made possible, but practicable, such that most delicate

and frail objects can be handled mechanically during the washing operation without in the least marring their character and beauty. By reducing friction on the articles to be washed the life of the article is preserved. These and the other objects of the invention are attained by so constructing and associating the tub and the gyrator of the washing machine, and so operating the gyrator, that the weight of the articles does not interfere with the gyrator, or its action, or with the tub and its co-action with the gyrator. In washing machines as has been previously [illegible] to entirely use upstanding agitators located at the bottom of the tub, for the weight of the clothes, goods or other materials underlying a washing operation, tends to oppose the action of the agitator and render it ineffective to permit the thorough penetration or passing of the clothes [illegible] gyrator, and thus, by the invention, the articles to be cleaned are not only given a definite washing and cleansing movement, but are also maintained, during such movement, in a suspended condition, so that the rapid and energetic alternating rotary movements of the gyrator do not interfere with the goods or cause them any injury or damage, while at the same time the goods and the wash water, (or the rinse water, when rinsing), are turbulently swirled or whirled about with a surging and seething movement within the tub. To this end the tub preferably has a smooth interior not interrupted by flanges or other projections, and preferably has inclined side or bottom portions so associated with the gyrator and the remainder of the tub as to cooperate therewith in aid of such action.

Still further objects of the invention reside in providing a novel construction of agitator blades; and in further providing:

another object of the invention, the gyrator is provided with flanges which, during the alternations thereof, act to successively impart movement to the contents of the tub, such that the resultant direction of movement of the contents is normally radially outward from the central portion of the tub, then upwardly, then inwardly and then downwardly toward the center of the gyrator, and yet at the same time there is a generally rotary progression or movement about the inside of the tub, such movement being in the nature of a gyratory action or movement and appearing to be that of a body around a ring. In this way the goods or objects undergoing the washing operation are thoroughly moved about in the tub by devious paths, while at the same time the wash water or cleansing fluid is being vigorously agitated and vigorously moved about the tub, also in devious paths, and also to sustain the washable materials thereby they will not be injuriously affected by the gyrator operating or actuating mechanism which may be readily thrown into and out of operative connection with the gyrator at will; to provide resilient means, tending to normally render the gyrator inoperative but yielding to render the same operative when manually actuated; to provide a combined means for guarding against the accidental contact or interference with the driving mechanism of the washing machine and maintaining the driving mechanism in effective driving condition, as by constantly maintaining a driving belt taut; and to provide other features having the objects, advantages and capabilities hereafter more fully appearing.

Due to the construction and arrangement of the tub, gyrator and driving mechanism, this machine accomplishes a decidedly new result, in that while the clothes are washed thoroughly, this is done by the action of the water itself on the materials as distinguished from their being rubbed or drawn through the water by a dolly or other mechanism, or tumbled against the sides of the tub or rubbed against projections on the interior of the tub. In my machine the clothes are driven and whirled about in and by the water in the interior of the smooth tub. The materials never come in any substantial contact with either the tub, or the gyrator which initially causes the agitation, seething and surging of the water on the interior of the tub. The peculiar movement of the water caused by the action of my gyrator in operation largely prevents rubbing the clothes against the container or gyrator and eliminates the deterioration of the materials being washed by it. These and other advantages which I find it difficult to explain because of the unusual movement of the water are possessed by my machine.

In the drawing illustrating a preferred form of the invention:

Fig. 1 is a vertical sectional view taken through the washing machine.

Fig. 2 is a horizontal sectional view taken through the tub, showing the gyrator in top plan view.

Fig. 3 is a sectional view showing portions of the operating mechanism

Fig. 4 is a detail vertical sectional view on an enlarged scale of the bottom of the tub, the gyratator, part of the gyratator operating mechanism and the packing means for the bearing of the gyratator shaft.

Fig. 5 is a detailed sectional view of the driving connection between the gyratator and the driving mechanism therefor.

Fig. 6 is a top plan view of the bottom of the tub, the removable plate at with the gyratator removed.

Referring more particularly to the drawing the washing machine comprises a tub 1 supported upon and fastened to legs 2 having roller casters 3. To the legs 2 is secured a platform 4 upon which is supported a motor 5 bolted to an insulating base piece 6 in turn bolted to the platform 4. The legs 2 have telescopic sections 7 of tubular form slidable in clamp portions 8, forming part of the legs 2, for the purpose of adjusting the height of the washing machine, the sections 7 being held in adjusted position by means of set screws 8. The motor 5 is connected to the driving mechanism by means of a belt 9 running over a pulley 10 fixed to the motor shaft and a driven pulley 11 fastened to a cross shaft 12 carrying a worm screw 13 in mesh with a worm gear 14 keyed to a vertical shaft 15. The gear mechanism 13-14 is suitably housed in a housing 16 bolted to and forming part of one of the supporting legs of the washing machine.

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Between the motor 5 and the gear mechanism 13-14 extends an aluminum belt guard 17 which encases the belt 9 and pulleys 10 and 11, the guard having a flange 18 extending over the upper lap of the belt and the pulley 10., By this means ~~by this~~ accidental contact with the driving belt 9 and pulleys 10 and 11 is prevented. The guard has a hub portion 19 by which it is ~~rotatably~~ pivotally supported upon a part of the shaft 12 between the bearings 20 and 21 formed in the housing 16 for such shaft. To an intermediate part of the guard is fastened a pivot stud 22 upon which is idly and rotatably carried a belt tightener roller 23. It will be noted that this guard is supported only by the shaft 12 and the roller 23 bearing upon the upper lap of the belt 9, so that the guard is capable of an upward and downward swinging movement about the axis of the shaft 12 as the belt becomes taut or slack. The amount of the tautness given the belt, as the roller 23 presses against it, is derived from the combined weight of the guard, with the parts carried by it, and a tension spring 24 connected between and to the guard 17 and the platform 4, the tension of the spring adding to the weight of the guard to maintain the roller 23 in tightening contact with the belt.

In vertical alignment with the shaft 12 is a second shaft 25, rotatably supported in suitable bearings 26 and 27 respectively, forming parts of the crank and gear housings 28 and 29, the former of which, ~~is~~ being integral with the housing 28, is rigidly connected to the tub by means of a bracket 30 and bolts 31 and 32 and forming the top and

While this embodiment illustrates the invention, it is to be understood that the gyrator may be located at the top of the tub and in depending position from the top or cover thereof.

intermediate members 33 and 34 of the housing 16, the latter (housing 34) of which is preferably supported upon a ledge 35 rigidly bolted to the side of the tub 1 and also made fast to the top of the tub through a bolted bracket 36. A tube 36 is connected between the members 33 and 34 and houses the shaft 38. The shaft 38 drives a wringer 37 through the medium of clutches 38,39 and 40, and gears 41, 42, and 43, which may be manually and selectively controlled through the handle 44 for causing the operating of the wringer in any direction desired and in whatever position the wringer may have relative to the tub. The wringer is capable of swinging into different positions with respect to the tub, about the axis of the shaft 38, and to be held in any of its positions by a spring pressed locking pin 45 cooperative with recesses in the ledge 35. The details of the mechanism for operating the wringer are unimportant and immaterial as they do not form part of this invention, further description thereof is deemed unnecessary.

The tub 1 is preferably substantially square in horizontal cross-section and is shallow with respect to its horizontal dimensions. It has a central bottom portion 46, an inclined portion 48 and vertical side walls 49. It may, however, be of other form than square and the inclined portion 48 may be omitted. The bottom 46 of the tub 1 has a circular opening which is normally closed by a plate 47 bolted to the bottom 46. The radially extending portion 48 at the bottom 46

inclines upwardly toward the vertical side of walls 49 of the tub for a purpose hereafter described. The plate 47 supports the gyratator 51, the packing means for the gyratator shaft 53 and part of the operating mechanism for the gyratator. The [illegible] of sheet metal preferably aluminum, and is of generally circular form, when viewed in plan. It has a hollow central cone or conoidal shaped portion 83, an annular trough portion 84 and an upwardly inclined peripheral portion 85, extending radially from the central portion 83, and formed integral herewith and with the trough and peripheral portions 84 and 85, are vertical flat blades or flanges 86 of the shape clearly shown in Fig. 4 of the drawing. In the embodiment shown there are four of these blades, but any other number may be used as desired. Within the central portion 83 and depending from the apex 87 of the conoid is a hollow pyramidal socket 88, preferably square in horizontal section. It is adapted to fit upon a square pyramidal block or step 89 socketed to fit upon the upper end of the shaft 53 and secured to said shaft, to positively rotate therewith, by a dowel pin 90 extending transversely through the shaft. At the upper end portion of the step 89 is formed an annular groove 91 in which reposes a spring lock ring 92 adapted, when the gyratator is forcibly moved downwardly upon the step 89, to expand into an annular groove 93 formed in the apex portion 87 of the gyratator. The uppermost end 94 of the step is squared to fit into a like aperture formed into the apex 87. The lower end of the socket may be provided with notches into which the ends of the cross pin 90 may extend, if desired. The various gyratator portions, namely, the apex, trough, peripheral, blade and pyramidal portions all are preferably integral.

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The shaft 83 is fixed to a pinion 85 by means of a key 86, and has bearings 87 and 88 respectively formed in the plate 47 and in a bracket 89 bolted to the underside of the plate 47. These bearings have bushings 70 and 71, preferably of brass or bronze. The pinion 85 is in thrust bearing with the ends of the bearings 87 and 88, and clamping bolts holding the bracket 89 in place such that the pinion 85 has no loose play, yet it is permitted to freely rotate or oscillate. The lower end of the shaft 83 has a grease cup 72 operative to supply a lubricant through bores 73, 74, and 75 to the bearing surface between the shaft 83 and bushings 70 and 71. The bracket has an arm 76 upon which rests and freely slides reciprocating rack 77 adapted to mesh with the drive the pinion 85, the other end of crank arm portion 81 of the rack being pivotally connected to a crank pin 78 fixed to crank arm 79 and 80 fastened to the ends of the shafts 18 and 25.

The rack 77 may be thrown into or out of operative engagement or mesh with the pinion 85 at will. This is accomplished by the mechanism shown in Fig. 3. From the end of the arm 76 is pivotally supported a bell crank lever 82 carrying at one of its ends a roller 84 bearing against the rear face of the rack 77 and being apertured at its other end to receive a bent end of a link 85 running to a crank arm 86 having its free end also apertured to receive the other bent end of the link, the link being thus pivotally connected to said lever 82 and arm 86. The arm is fast to a vertical shaft 87 rotatably supported in bearings 88 and 89 respectively rigidly spaced to a leg 3 and the side of the tub 1 (see Fig. 3 and 1). To the upper end of

the shaft is fastened a handle 90 by which the lever 85, through the media of link 86, arm 86 and shaft 87 may be forced against the rack to cause the latter to engage with the pinion 88. A spring 91 is connected to the end of the rack 77 and a fixed part of the washer, as a leg 8 thereof, for the purpose of automatically disengaging the rack from the pinion and to hold the rack away from the pinion when the handle 90 is shifted to throw the lever 85 out of operation and thus stop the oscillation or rotation of the gyratator. The spring constantly tends to hold the rack away from the pinion and against the roller 84, the rack being thrown into mesh with the pinion only when the lever 85 and roller 84 are moved to positively shift the rack into engagement. The rotation of the crank 70-72 will cause a reciprocation of the rack over the [illegible] whether or not the rack be in engagement with the pinion. When the rack is moved into mesh with the pinion, the latter is caused to alternately rotate or angularly oscillate, and hence the gyratator in the tub.

For the purpose of packing the gyratator shaft 68 the plate 47 and the washer 48 are provided with communicating chambers adapted to hold a packing material 89, preferably composed of chopped or shredded and comminuted asbestos, graphite and oil. The packing means comprises an annular chamber 93 surrounding the shaft 68 between the bearing 47 and bushing 70, and a washer or packing 94, preferably of leather, in the opening at the top of the chamber 93 and located between the bottom end 98 of the stop 95 and the packing material in the chamber 93. The chamber 93 extends through a passage 96 to a plunger chamber 97,

The lower portion 96 of the latter has a screw threaded aperture in which operates a screw plunger 99 having at its outer end a winged finger piece 100 which may be manually rotated to feed the plunger into the chamber 97 against the packing 98. The packing 98 is somewhat plastic and is in a sort of fluidal state so that the stress applied to it by the forceful entry of the screw plunger into the chamber 97 will cause the packing 98 to flow through the passage 96 to the chamber 95 and completely fill the space of the latter. In this way compensation for any loss of packing owing to wear, leakage and otherwise is readily made. Leakage of wash water or cleansing fluid from the tub around the shaft 88 is prevented by this novel packing means.

The open top of the tub is normally closed by a hinged cover 101 having a hinge 102 at one side and a finger grip piece 103 at the other side.

At one side of the tub is secured a liquid soap dispenser comprising a reservoir 104 fastened to the wall 48 by bolts 105 and adapted to contain a relatively large supply of soap. To this chamber is connected a measuring pump 106 ~~into the upper portion of which is directed by conductor 60 from~~ a charge of fluid soap from the piston end, piston rod 107, and ~~a discharge of the charge upon a~~ discharged downward movement of the piston and rod, into the tub through a discharge tube or nozzle 108 so located that the ejected charge will be in general direction of the movement of the mass of material and cleansing solution within the tub during the washing operation.

When the gyrator is alternately rotated or oscillated, with a mass of material to be cleansed and the cleansing liquid in the tub, the mass is given a radially outward movement, then an upward movement owing to the shape of the trough 54 and the inclination of the periphery 55 and the wall 48, then an upward movement toward the upper part of the tub, then an inward movement, then a downward movement in the center of the tub toward the cone 53 of the gyrator, the mass first in one direction and then in an opposite direction also progressing, in its whirling action, about the tub, so that the resultant motion is substantially a gyratory one, as a helical movement about a ring having a circular cross-section. In this way the washing and washable materials are given a turbulent swirling action. At or before the start of the operation, and during the operation of the machine, as desired, charges of liquid soap may be ejected into the moving mass in the tub.

The plate 47 has a drain port 109 with which may be connected a hose normally supported at its free end at one side of the machine but which may be lowered to drain the tub of its contents. The plate 47 is formed with a shallow depression 110 surrounded by the flange 50 and having an inclined bottom 111 extended from one side to the other of the shaft 89 and chamber 93, in order to permit efficient drainage of the fluids in the tub through drain port 109.

It is of course understood that the specific description of structure set forth above may be departed from without departing from the spirit of my invention as set forth in this specification and the appended claims.

Having now described my invention.

I CLAIM: Fig. 1

1. In a washing machine comprising a driving power means, the combination of a tub for containing wash water and goods to be washed, an alternating rotatory gyrotator in said tub and acting upon the contents of said tub to cause a substantially gyratory movement of said contents.

2. In a washing machine comprising a driving power means, the combination of a tub for containing wash water and goods to be washed, an alternating rotatory gyrotator in said tub, said gyrotator having, means operating to effect a substantially gyratory movement of the contents of the tub.

3. In a washing machine, the combination of a tub containing wash water and goods to be washed, an alternating rotatory gyrotator in said tub, said gyrotator being provided with outstanding flanges operative to cause a substantially gyratory whirling movement of the contents of said tub.

4. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, and an oscillating gyrotator, said gyrotator comprising flanges operative to cause the cleansing substance and agitate said materials.

5. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, an oscillating gyrotator having radially extending flanges operative to cause an outwardly and

upwardly swirl of said materials and the cleansing substance.

6. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, an oscillating agitator, and an oscillating mechanism connected to said power means operable to oscillate said agitator, said agitator comprising flanges operative to cause an outwardly and upwardly swirl of said materials and the cleansing substance.

7. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, an oscillating agitator, and an oscillating mechanism connected to said power means and operable to oscillate said agitator, said agitator comprising flanges operative to cause an outwardly and upwardly swirl of said materials and the cleansing substance, and manually movable means for operatively connecting and disconnecting said oscillating mechanism to and from said agitator.

8. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, said tub having an upwardly inclined portion, an oscillating agitator cooperative with said inclined portion for forcing said materials and cleansing

9. In a washing machine comprising driving power means, the combination of a tub for containing such water and goods to be washed, an alternating rotary agitator in said tub, said tub

having flared portion, said gyratator and flared portion cooperating to swirl said wash water and goods with a substantially gyratory movement.

10. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, said tub having an upwardly inclined smooth portion, an alternating rotary gyratator cooperative with said inclined portion for forcing said materials and cleansing substance toward said inclined portion.

11. In a washing machine comprising driving power means, a combination of a tub for containing a cleansing substance and materials to be cleansed, said tub having an upwardly inclined side portion, an alternating rotary gyratator cooperative with said inclined side portion for forcing cold water and cleansing substance toward said inclined side portion, said gyratator comprising flanges operative to cause an outwardly and upwardly swirl of said materials and cleansing substance.

12. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a gyratator, mechanism driven by said power means for oscillating said gyratator, said gyratator having flanges and a radially depressed portion operative to upwardly swirl said cleansing substance and material.

13. In a washing machine comprising a driving power means, the combination of a tub for containing washing and

washable materials, a gyratator, means operable to alternately rotate said gyratator, said gyratator being provided with upstanding flanges and depressed portions between said flanges and operative to swirl said materials with a substantially gyratatory movement.

14. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a gyratator, mechanism driven by said power means for alternately rotating said gyratator, said gyratator having ribs and a radially depressed portion operative to upwardly swirl said cleansing substance and materials, said tub having an upwardly inclined portion adjacent the periphery of said gyratator and cooperative with said gyratator for effecting the swirl of said cleansing substance and material.

15. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a gyratator, mechanism driven by said power means for alternately rotating said gyratator, said gyratator having upwardly extending flanges and a radially depressed portion operative to upwardly swirl said cleansing material and substance.

16. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a gyratator, mechanism driven by said power means for alternately rotating said gyratator, said gyratator having upwardly and radially extending flanges and a

radially depressed surface operative to upwardly swirl said cleansing substances and materials.

12. In a washing machine comprising driving power means, the combination of a gyrator operated by said means, a tub for containing water and goods to be washed, said tub being relatively shallow with respect to its horizontal dimension, said gyrator operable to maintain said goods in suspension in the water while being whirled about said tub with said water.

13. In a washing machine comprising driving power means, the combination of a gyrator operated by said means, a tub for containing wash water and goods to be washed, said tub being substantially square in cross section and relatively shallow, said gyrator operable to swirl said water and goods with a substantially gyratory movement in said tub.

14. In a washing machine comprising driving power means, the combination of a gyrator operated by said means, a tub for containing wash water and goods to be washed, said tub having a tapered lower portion, said gyrator and tub cooperating to swirl said water and goods with a substantially gyratory movement in said tub.

15. In a washing machine comprising driving power means, the combination of a tub adapted to contain washing and washable materials, a gyrator in said tub and operated by said means, said gyrator having a centrally raised portion and radially depressed portion, and operable to swirl said materials with a substantially gyratory movement.

(1939)

10 72 31. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a gyrotator in said tub and operated by said means, said gyrotator having a centrally raised portion, a radially depressed portion and flanges extending radially from said centrally raised portion, said gyrotator operable to swirl said materials with a substantially gyratory movement in said tub.

11 73 32. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a gyrotator in said tub and operated by said means, said gyrotator having a central conoidal portion, an inclined peripheral portion and an intermediate trough portion, said gyrotator operating to swirl said materials with a substantially gyratory movement in said tub.

33. In a washing machine comprising driving power means, the combination of tub for containing a cleansing substance and materials to be cleansed, a gyrotator, mechanism driven by said power means for alternately rotating said gyrotator, said mechanism comprising a reciprocating member, manually movable means for operatively connecting and disconnecting said oscillating member to and from said gyrotator.

34. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a gyrotator, mechanism driven by said power means for alternately rotating said gyrotator, said

mechanism comprising a reciprocating member, manually movable means for operatively connecting and disconnecting said reciprocating member to and from said gyrotator, and means normally tending to hold said reciprocating member disconnected from said gyrotator.

26. In a washing machine comprising driving power means the combination of a tub for containing a cleansing substance and materials to be cleansed, a gyrotator, mechanism driven by said power means for alternately rotating said gyrotator, said mechanism comprising a reciprocating member, manually movable means for operatively connecting and disconnecting said reciprocating member to and from said gyrotator, and resilient means normally tending to hold said reciprocating member disconnecting from said gyrotator.

~~25. In a washing machine comprising driving power means, the combination of a tub for holding a cleansing fluid and materials to be cleansed, a gyrotator for giving said substance and materials a turbulent motion, said power means comprising a belt, and a movable belt guard having a tightener pressing against said belt.~~

27. In a washing machine comprising driving power means, the combination of a tub for holding a cleansing fluid and materials to be cleansed, a gyrotator for giving said substance and materials a turbulent motion, said power means comprising a belt, and a pivotally supported guard having a tightener pressing against said belt.

28. In a washing machine comprising driving power means, the combination of a tub for holding a cleansing fluid and materials

to be cleansed, a gyrator for giving said substance and materials turbulent motion, said power means comprising a belt, and a movable guard having a tightener resiliently pressing against said belt, and a spring connected to said guard for holding said tightener against said belt.

12 to 26. In a washing machine comprising driving power means, the combination of a tub for holding a cleansing fluid and materials to be cleansed, a gyrator for giving said substance and materials turbulent motion, said tub having an inclined bottom portion extending from one side to the other of the center of said tub, and an eccentrically located drainage connection attached to said inclined portion.

Add A1 cl. 13

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IN WITNESS WHEREOF, I hereunto subscribe my name to this specification in the presence of the witnesses.

Howard F. Snyder
Inventor

WITNESSES:

[illegible]

[illegible]

OATH

STATE OF Iowa } ss
COUNTY OF Jasper }

Howard F. Snyder, the above named petitioner, being duly sworn, deposes and says that he is a citizen of the United States, and a resident of Newton, in the County of Jasper and State of Iowa; that he verily believes himself to be the original, first and sole inventor of the improvements in

WASHING MACHINES

described in the annexed specification; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof, or patented or described in any printed publication in any country before his invention or discovery thereof, or more than two years prior to this application, or in public use or on sale in the United States for more than two years prior to this application; that said invention has not been patented in any country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months prior to this application, and that no application for patent on said improvements has been filed by him or his representatives or assigns in any country foreign to the United States.

Inventor's full name Howard F. Snyder

Subscribed and sworn to before me this 6 day of June A D 1922

[illegible]
Notary Public

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Ex. 25 Exam. 216 S-66 Paper No. 8

JCS:CB

DEPARTMENT OF THE INTERIOR

UNITED STATES PATENT OFFICE

WASHINGTON July 18, 1922

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

PATENT OFFICE
JUL 20
MAILED

Please find below a communication from the EXAMINER in charge of the application of

Howard P. Snyder, filed June 14, 1922, Ser. No. 568,158

Washing machines

Thomas E. Robertson
Commissioner of Patents.

This application has been examined.

Throughout the specification and claims "gyrotator" should be agitator.

In the claims "upwardly and outwardly swirl" should be upward and outward swirl.

In the last line of claim 28 "disconnecting" should be disconnected.

Claims 1 to 6, 9 to 11 and 17 to 20 inclusive are rejected in view of

Mills et al., Nov. 24, 1914, 1,118,210 (68-18).
Nielsen, Aug. 20, 1918, 1,276,884, (259-108).

Claims 7, 23 and 24 are rejected in view of Mills et al. and Nielsen taken with

Beckwith, Apr. 1, 1919, 1,298,645, (259-101).

Claims 26, 27 and 28 are rejected in view of Mills et al. and Nielsen taken with the fact that there is no patentable combination between a particular agitator and a belt tightener.

Claim 29 is rejected in view of Mills et al. and Nielsen taken with

Werner, Mar. 16, 1909, 915,139 (259-108).

showing a drain opening.

Asst. Div. 25.

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✓ F3a

OCT 20 1922

IN THE UNITED STATES PATENT OFFICE

In Re-application of
HOWARD P. SNYDER,
Serial No.560,158,
Filed June 14, 1922,
Div. 35, Room 518.

HANDLING MACHINERY

AMENDMENT

October 11,1922.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:-

In response to the Office Action of July 18, 1922, in the above entitled application, the applicant amends as follows:

In the specification on page 4, after line 19, insert the following paragraph:-

(a') By the term gyrotor is meant an alternating rotary member operable to effect movements of fluids and materials from the central portion of the member toward its outer edge or borders.

Claim 4, line 4, change "outwardly" to-- outward; and line 5, change upwardly" to-- upward.

Claim 5, line 4, change "outwardly" to-- outward; and line 5, change "upwardly" to - upward.

Claim 6, line 5, change "flanges" to-- a base member and flanges and being; and line 6, change "outwardly and upwardly" to--outward and upward.

Claim 7, line 6, change "outwardly and upwardly" to-- outward and upward.

Claim 8, line 6, change "toward" to-- upwardly toward and by.

Claim 9, line 8, after "gyrotor" insert-- having a depressed portion being located.

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Claim 10, line 6, change "toward" to-- upwardly toward and by.

Claim 11, line 7, after "comprising" insert-- a base member and; and in line 8, change "outwardly and upwardly" to-- outward and upward.

Claim 17, line 6, after "suspension" insert-- about the gyrotator.

Claim 18, line 4, before "substantially" insert-- formed from a sheet of material and being.

Claim 19, line 4, change "and tub" to-- having a flared portion, said tapered and flared portions.

Claim 25, line 9, change "disconnecting" to--disconnected.

Claim 29, line 4, change "said tub having an" to-- a drain plate at the bottom of said tub and having a; and in line 5, change "inclined" to--sloping.

Please add the following claims:-

30. In a washing machine comprising a driving power means, a tub, an alternating rotary gyrotator having a base portion and [illegible] on said base portion, said base portion and [illegible] on the contents of the tub to give the contents a gyratory movement.

31. In a washing machine comprising a driving power means, a tub, an alternating rotary gyrotator having a generally horizontal base portion and upstanding members on said base portion, said base portion and upstanding members operating on the contents of the tub to give the contents a gyratory movement.

32. In a washing machine comprising a driving power means, a tub, an alternating rotary gyrotator, having a plate formed with an annular depression, a raised central portion and upstanding flanges in said depression, said plate, depression, central portion and flanges operating on the contents of the tub to give the contents a gyratory movement.

Add

20. In a washing machine comprising driving power means, a tub, a gyrotator therein and operated by said means, the gyrotator and tub having cooperating flared portions for upwardly swirling the contents of the tub.

REMARKS

The term "gyrotator" is defined in the specification by amendment. It is believed the use of this word is not objectionable. The Examiner will note that this particular member has entirely different actions than the usual form of dollies used in washing machines, and the use of a new term is necessary to describe it and its peculiarities.

The claims have been amended to correct the use of the word "upwardly" and "outwardly" as well as the word "disconnecting".

The action on the claims has been carefully examined, some of the claims having been amended to more clearly define the invention, and new claims added to more adequately protect the invention.

In regard to the rejection of claims 1 to 6, 8, to 11 and 17, to 20 inclusive, upon the patents to Mills and Nielsen, it is believed that the Examiner did not understand the terminology of these claims. In all of these claims, the structure calls for an alternating rotary gyrotator, defined in the specification. The action of this gyrotator is stated as acting upon the contents of the tub so as to cause a substantially gyratory movement of the contents. This is not true of the Mills and Nielsen construction. In the Mills construction, it is clear that the members 48 merely act, as an ordinary agitator, and they cannot act to cause a gyratory movement of the contents. It is believed that these claims, as originally presented, cover allowable subject-matter, when the terms are given the meanings intended therefor from the disclosure of the specification. In the Nielsen patent there is shown a mere stirrer. It is not

568 2. 10/4/29

a washing machine member. The stirrer is operable on liquids and semi-solids, so as to thoroughly agitate or mix the same in the vessel. There is nothing in this patent suggesting the idea of a washing machine structure, nor the actions pertaining to a washing operation in a washing machine. It will be noted that the bottom of the vessel in the Nielsen construction is connected with a pipe for the introduction of liquid beneath the agitator 30. The agitator 30 is in the form of an ordinary set of blades which act upon the contents of the vessel to merely agitate such contents. In Fig. 1 of the patent is shown a set of arrows indicating the movement of the liquid by the action of the agitator, a large portion of the contents flowing downwardly in the bottom of the tub and upwardly into the spaces between the blades of the agitator. This is an entirely different action from that shown in applicant's drawing. It is believed that the structure called for in the claims above mentioned are clear from the structure shown in the Nielsen patent. Moreover, it will be noted that the Nielsen device relates to non-analogous art. In this connection, attention is directed to the decision of Hobbs vs Beach, 94 O. G. 2267, in which the Court held that a machine for attaching gummed strips to the corners of paper boxes is not anticipated by a machine for feeding, cutting and pasting address slips to newspapers, although by strengthening it and changing it in certain particulars it could be adapted for such use, and also that while there is an analogy between the two machines, there can be scarcely said to be a similarity in the functions of two machines. The same applies in the comparison of the Nielsen structure with the washing machine disclosed by the applicant. It can hardly be said that the functions of the two machines are similar, although there might be some analogy

in the appearance of parts of the machines as depicted on the drawings. It is therefore believed that the language in the last three lines of claims 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, and 17, the last four lines of claim 18 and the last three lines of claim 19 and 20, sufficiently distinguish applicant's construction from the prior art. It is requested that these claims be allowed.

It will be noted that claim 3 calls for the gyrotator having upstanding means operative to cause the gyratory whirling movement of the contents of the tub. There is no such structure as this in the prior art nor any structure that has the same functions. Claim 4 calls for these upstanding means being in the form of flanges. Claim 5 calls for radially extending flanges. Claim 6 has been amended to include the idea of a base member together with flanges which operate in the manner stated in the last two lines of the claim. Claim 8 has been slightly amended to more clearly define the cooperation between the gyrotator and the inclined portion of the tub, as forcing the materials and cleansing substance upwardly toward and by the inclined portion. Claim 9 has been amended to include a depressed portion in the gyrotator stated to be located in the tub, the last portion of the tub as cooperating with the gyrotator and the parts thereof to cause the gyratory movement mentioned in the last three lines of the claim.

The last line of claim 10 also includes the idea of the materials being forced upwardly toward and by the inclined portion of the tub. In claim 11 the gyrotator is stated to have a base member and flanges, both of which cooperate to produce the swirling action mentioned in the last two lines of the claim.

Claims 12, 13, 14, 15, and 16 are stated to be allowed.

In claim 17, the goods is stated to be held in suspension above the agitator. It will be noted in the Nielsen construction that the contents of the vessel is not held above the agitator, but is caused to move bodily through a considerable space between the agitator and the side of the vessel, and partly toward the bottom of the vessel so that the same may pass upwardly between the blades of the agitator. It is clear that in such structure the contents of the vessel, if they were goods to be washed would receive very severe and injurious treatment. The two devices certainly cannot act in the same manner nor for the same purposes.

Claim 18, states the tub as being formed from a sheet of material and being substantially square in cross section and relatively shallow. This combination of elements is not found in the prior art. It may be true that the Mills tub appears to be a shallow tub, but it is not a tub of the same construction as called for in this claim. That tub apparently is a built up tub from separate pieces requiring special joining to prevent leakage. Applicant's tub is formed from a single sheet of material. It is believed that applicant's tub is more efficient, more economical, and has a greater life than the type of tub shown in the Mills patent.

In claim 19, the agitator is stated to have a flared portion, which together with the tapered portion of the tub causes the particular swirling action defined in the last three lines of the claim. This construction as well as the functions stated are not present in the prior art.

The rejection of claim 20 is probably an oversight. This claim calls for a agitator having a centrally raised portion and a radially depressed portion, and operable to produce the functions stated in the last two lines of the claim. This construction is not found in the prior art, and in view of the allowance of the other claims, it is believed that this

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claim should also have been allowed. An allowance thereof is requested.

The rejection of claim 7, upon the patents to Hills, Nielsen and Beckwith, requires the combination of at least three references to make out an alleged anticipation. This is not in accordance with the general practice. This claim calls for, among other elements of the claim, manually movable means for operatively connecting and disconnecting the oscillating mechanism to and from the gyrotator. This construction is not present in the Beckwith patent. The oscillating rock 15 in the Beckwith construction, which corresponds more nearly to the applicant's rock 77, is not movable, manually or otherwise, for connection to and disconnection from the gyrotator, or for connecting and disconnecting the oscillating mechanism to and from the gyrotator. In Beckwith's construction, the wheel 26 is fixed to a shaft 27 upon which is also carried a gear 28, the shaft being supported upon the ends of a pair of arms 32, connected to a foot treadle or pedal. When the arms 32 are operated by the foot, the shaft 27, wheel 26 and gear 28 are moved upwardly to engage the gear 26 with the gear 21. The operation of the rock is not produced by any power mechanism, as called for in the beginning of the claim, but is manually operated from the hand lever 16. The wheel 26 together with the connecting gearing to the handle 16 apparently is for the purpose of fly-wheel effect. The mechanism itself is not a power operating means for operating the dolly 13 through the rock 15, the operation of the dolly being derived wholly from the lever 16 by a manual operation thereof. It is therefore submitted that this construction cannot be combined with the other constructions mentioned by the Examiner and reorganized and reconstructed for the purpose of making

a construction like that claimed by the applicant. Such combination of references is not in accordance with the practice. It is therefore requested that this claim be allowed.

Claims 21 and 22 stand allowed.

The above remarks regarding the rejection of claim 7 and the non-pertinence of the references thereto, also apply to the rejection of claims 23 and 24. These claims call for the same means for movably connecting and disconnecting the oscillating members to and from the gyrotator, claim 24 also calling for means for normally tending to hold the reciprocating member disconnected from the gyrotator. These features are not present in the prior art.

Claim 25, with the corrections made thereto, now stand allowed.

The rejection of claims 26, 27 and 28 is not clear. It is submitted that there is a combination between the various elements stated in these claims. The action of the gyrotator must be a smooth action, such that it will not be irregular or have the tendency of causing the gyratory movement of the contents of the tub to move in non-uniform movements. As for example, if very delicate material such as lace curtains and the like are being washed, and if the gyrotator were to operate irregularly or at improper speed, the materials being washed would travel faster at certain instants of operation than others, and thus subject the material to injury as by tearing or otherwise. By having a properly constructed belt-tightener, so that the gyrotator will work uniformly and evenly, the materials will be acted upon smoothly without danger of being torn or injured. It is submitted that there is a proper and legitimate combination between all the elements stated in these claims. Inasmuch as there is nothing of this kind in the prior constructions, it is submitted that these claims cover allowable subject-matter.

The references cited do not approach the idea of invention called for by these claims.

Claim 29 has been amended to more clearly define the drain part of the tub, by including a drain plate at the bottom of the tub and having a sloping bottom portion in the plate, extending from one side to the other of the center of the tub. The Werner construction does not have any such feature. The Werner device is a cream-breaker and melter and pertains to non-analagous art. The vessel in that construction is of substantially hemi-spherical form and has no special provision at the bottom for receiving drain water and for conducting drain water to a low point where it may pass off through an opening. It may be true that there is a pipe 8 which may act as a drain member, but this does not cover all of the elements called for in the claim.

New claims have been added to more adequately cover applicant's invention. These claims call for the gyrator having a base portion with means thereon which operate together to effect the operations and functions stated in the last two or three lines of these claims. Claim 31 calls for the base portion having upstanding members, while in claim 32 these members are defined as "upstanding flanges". Claim 33 calls for the gyrator and the tub both having flared portions which operate to upwardly swirl the contents of the tub. These features are not part of the prior art.

From the above remarks and changes, it is believed that the claims will now be regarded as allowable and an early action to that end is requested.

Respectfully submitted,

Wallace R. Kane

LLB:B

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Div. 25 Room 315 Paper No. 4

JCS:CS

DEPARTMENT OF THE INTERIOR
UNITED STATES PATENT OFFICE

WASHINGTON Nov. 22, 1922

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

PATENT OFFICE
NOV 22 1922
MAILED.

Please find below a communication from the EXAMINER in charge of the application of

Harvard K. Snyder, filed June 14, 1922, Ser. No. 568,168

Washing Machines

Thomas E. Robertson
Commissioner of Patents.

In response to amendment filed Oct. 19, 1922:

Claims 1, 2, 3, 4, 5, 6, 8, 10, 11, 30 and 31 are rejected in view of either

Davis,	Sept. 25, 1917,	1,240,826,	(259-96) or
Sieben,	Apr. 11, 1922,	1,412,714,	(259-144).

These patents show agitators that will give the contents of the tub the same motion as applicants device does. It will be observed that the side wall of Davis is flared.

Claims 7, 23, 26, 27 and 28 are rejected in view of the fact that it does not constitute invention to provide as a part of the driving means for a particular stirrer a means for connecting and disconnecting the stirrer such as a belt tightener or a means to move a rack toward and away from a pinion.

It is not necessary that applicant coin a new word such as "gyrotator" to specify his agitator. The claims should specify applicant's invention without the use of a coined word.

J. H. Siabutoot,
Examiner, Div. 25.

1114

IN THE UNITED STATES PATENT OFFICE

In re application of:
HOWARD F. SNYDER
Serial No. 568,158,
Filed June 14, 1923,
Div. 25, Room 315.

WASHING MACHINES

PATENT OFFICE AUG 31 1923 DIVISION XXV

AMENDMENT

July 26, 1923

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In response to the Office Action of Nov. 22, 1922, in the above entitled application, the applicant amends as follows:

Claim 1, line 4, before "acting" insert having means, and after "tub" (second occurrence) insert above the gyrator.

Claim 2, line 4, before "means" insert upstanding.

Claim 3, line 4, change "means" to flanges.

Claim 4, line 4, after "cause" insert above the gyrator.

Claim 5, line 4, after "operative" insert above the gyrator.

Claim 6, line 5, before "flanges" insert upstanding; line 8, after "cause" insert above the gyrator.

Claim 30, line 4, after "operating" insert above the base portion.

Please add the following claims:

34. A gyrator for washing machines, comprising a raised central portion, flanges, and radially depressed portions, said flanges extending laterally from said central portion and upwardly from said depressed portions.

35. A gyrator for washing machines, comprising a rounded central portion flaring downwardly and radially and then upwardly to form a depressed portion about the central portion,

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and flanges extending upwardly from the depressed portion.

36. A gyratator for washing machines, comprising a rounded central portion flaring downwardly and radially and then upwardly to form a depressed portion about the central portion, and flanges extending radially from said central portion.

37. A gyratator for washing machines, comprising a central conoidal portion, an inclined peripheral portion and an intermediate trough portion.

38. A gyratator for washing machines, a generally horizontal base portion and a raised central portion, and radially extending upstanding members connected to the central portion and above the base portion.

38.[0] A gyratator for washing machines, comprising a plate formed with an annular depression, a raised central portion and upstanding flanges extending radially from the central portion and into the depressed portion.

40. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a substantially cylindrical stem rising from and merging into the central portion thereof and terminating in an upper rounded end, said stem having spaced ribs extending vertically along its sides upwardly tapered throughout the length of said stem and extending outwardly across the dish-shaped member.

41. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a substantially cylindrical stem rising from and merging into the central portion thereof and terminating in an upper rounded end, and spaced ribs extending from the top of said stem vertically downward and outwardly and upwardly across said dish-shaped member, and having substantially semi-circular outer edges.

42. A jolly for a washing machine comprising a cup-shaped disk with a frusto-conical portion rising from its center having a substantially cylindrical stem projecting centrally thereabove and terminating in a rounded top, said stem having radical ribs projecting therefrom and extending along the sides thereof, said ribs being tapered throughout their length of said stem and extending in lobe-shaped form across the surface of said disk.

43. The structure set forth in claim 41, the lower portion of said semi-circular edges being substantially continuous with the surface of said dish-shaped member.

44. An agitating member for a washing machine comprising a cup-shaped disk having a frusto-conical portion rising from the center thereof, the vertical elements of which are concave so that the surface of said portion merges into the surface of said disk, and a round upwardly tapering portion projecting above said frusto-conical portion and terminating in a rounded surface, and narrow radial wings projecting from said latter portion and extending along the sides thereof and across the surface of said disk and having rounded outer edges merging into the concave surface of said disk.

45. An impeller for a washing machine comprising an annular trough, a stem rising centrally from said trough and having a plurality of circumferentially spaced radial wings projecting therefrom and extending along its sides and across the surface of said trough, the top surface of said wings above said trough curving downwardly and inwardly.

46. A jolly for a washing machine comprising a dish-shaped member and a rounded stem rising from and merging into the central portion thereof and terminating in an upper rounded end, spaced ribs extending vertically along said stem and merging into the upper rounded end thereof and extending across the dish-shaped member at the lower ends in lobe-shaped form whereby the upper surfaces thereof above said member are concave.

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42. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a circular dish-like member having a stem rising from and merging into its central portion, and ribs extending vertically from the upper end of said stem downwardly therealong and across the surface of said dish-like member.

43. A rotatable dolly for a washing machine adapted to be disposed in a liquid containing receptacle comprising a dish-shaped member having a central upstanding tapered stem with a rounded upper end, ribs extending across said dish and upwardly along the side of said stem and having rounded upper edges merging into the rounded surface of said stem.

44. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a stem rising from and merging into the central portion thereof and terminating in an upper rounded end, spaced ribs extending outwardly from said stem and across the dish-shaped member.

45. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a stem rising from and merging into the central portion thereof and terminating in an upper rounded end, and spaced ribs extending from said stem and outwardly and upwardly across said dish-shaped member.

46. A dolly for a washing machine comprising a cup-shaped dish with a fructo-conical portion rising from its center having a stem projecting centrally thereabove and terminating in a rounded top, said stem having radial ribs projecting therefrom and extending in approximately lobe-shaped form across the surface of said dish.

53. The structure set forth in claim [illegible], the lower

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portion of said semi-circular edges.

45. An agitating member for a washing machine comprising a cup-shaped disk having a frusto-conical portion rising from the center thereof, the vertical elements of which are concave so that the surface of said portion merges into the surface of said disk, and a round upwardly tapering portion projecting above said frusto-conical portion and terminating in a rounded surface, and radial wings projecting from said portion and extending across the surface of said disk.

46. A dolly for a washing machine comprising an annular trough, a stem rising centrally from said trough and having a plurality of circumferentially spaced radial wings projecting therefrom and extending across the surface of said trough.

47. A dolly for a washing machine comprising a dish-shaped member and a rounded stem rising from and merging into the central portion thereof and terminating in an upper rounded end, spaced ribs extending across the dish-shaped member at the lower ends in lobe-shaped form whereby the upper surfaces thereof above said member are concave.

48. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a circular disk-like member having a stem rising from and merging into its central portion, and ribs extending vertically from and across the surface of said disk-like member.

49. A rotatable dolly for a washing machine adapted to be disposed in a liquid containing receptacle comprising a dish-shaped member having a central upstanding tapered stem with a rounded upper end, ribs extending across said dish and upwardly therefrom.

50. A tub for a washing machine, comprising a bottom portion, side portions, and an upwardly inclined portion between the bottom and side portions.

Ernest E Page 5/13 C20 568 39

57 c. A tub for a washing machine, being formed from a sheet of material and being substantially square in cross section and relatively shallow.

58 c. In a washing machine, the combination of a tub having a flared bottom, and a gyratator having a depressed portion being located in the tub whereby the gyratator and the flared portion of the tub cooperate to swirl materials in the tub with a substantially gyratory movement.

59 c. In a washing machine, the combination of a tub having a tapered wall portion, a gyratator having a flared portion located in the tub, said tapered and flared portions cooperating to swirl materials in the tub with a substantially gyratory movement in said tub.

REMARKS

Certain of the claims have been amended to more clearly express the invention. Claims 1, 2, 3, 4, 5, 6, 30 and 31, as now presented, are free of the prior art. In both the Davis and Sieben structures are depending dollies with pendant ribs 6 or 23. These are not upstanding flanges, nor are they above the base portion of the dolly so that they could act upon the materials and the cleansing fluid above the dolly. In the devices referred to, the ribs act upon the liquid beneath the plate to cause the liquid to move radially and outwardly against the sides of the tub. The tub shown in the Davis patent does not cooperate with the dolly to cause a gyratory motion of the contents of the tub. In the Sieben patent no tub is shown. In applicant's device the action is above the gyratator and not below it. It is submitted that these claims are not anticipated by the patents last cited.

The rejection of claims 7, 33, 28, 27 and 29 is not understood. The Examiner merely makes a statement of opinion that no invention would be involved. No reasons are given. In applicant's device, the disconnecting and connecting feature and

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the belt tightening feature, do involve invention. As for example, the connecting and disconnecting means is effective to bring the gyratator into operation or throw it out of operation without necessitating the stopping of the rest of the driving mechanism. This is advantageous in that a quick throwing into operation or disconnection may be effected, an action which would be far quicker than would be possible by stopping the whole train of driving mechanism. When throwing the gyratator suddenly into operation it acts against the liquid in the tub so as to immediately raise any of the delicate fabrics that may tend to rest lightly against the flanges of the gyratator. The belt tightener feature is of advantage in giving a proper and even, smooth operation. In a washing machine where the motion of the gyratator is alternating rotary it is difficult to obtain a smooth operation but with a belt tightener means, as applicant uses, this end is effected. All of these features are important and produce certain advantages which the prior art does not disclose. It is, therefore, submitted that invention is involved.

The applicant has used the term "gyratator" and has defined that term in the specification, to express a peculiar action that is not ordinarily obtained with the usual type of agitator. The established practice permits the applicant, in such cases, to use a coined word. Inasmuch as the specification clearly defines this term there is no objection to it appearing in the application, particularly the claims.

Applicant has added some claims and also files an affidavit under Rule 48 to the fact that the invention expressed by these claims constituted a part of his invention as originally disclosed. While it is believed that there is sufficient foundation in the specification to support these claims without affidavit, the applicant nevertheless files the affidavit.

The Examiner will note that claims 40 to 48 inclusive are taken from the patent to Unruh, No. 1,459,423, granted June 19, 1923, for "Dolly for Washing Machine." It is requested that

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an interference be declared between this patent and this application. It is apparent that these claims are directed to the subject-matter of applicant's invention, and under Ex Parte Card & Card, 1904 C. D., 383, whatever slight, immaterial differences in terminology are included in the claims of the patent, cannot be of avail to prevent an interference since the two are directed to the same patentable subject-matter, and an interference in fact exists.

Claims 49 to 57 are based upon the preceding claims 40 to 48 for the purpose of more adequately covering the invention. Claims 58 and 59 are directed to other features of the invention and supported by the original specification as well as the attached affidavit. The prior art does not show any tub having the features disclosed in this application and the advantages thereof. It is believed that these claims cover allowable subjects-matter and an allowance of these claims is requested.

Claims 60 and 61 are to the combination of the tub and the gyratator setting forth the cooperation between the two and producing the particular effect flowing from this invention. The prior art fails to show any such combination and it is submitted that these claims should also be allowed.

In view of the above changes and remarks it is believed that the Examiner will agree with the applicant that these claims cover allowable subjects-matter and their allowance is requested at an early date.

It is also requested that an interference be declared without delay to determine the question of priority between the applicant and the patentee Unruh.

Respectfully submitted,

Wallace R Lane

LLR:LM

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IN THE UNITED STATES PATENT OFFICE

AFFIDAVIT UNDER RULE 48

STATE OF IOWA)
COUNTY OF JASPER) ss.

Howard F. Snyder, whose application for Letters Patent for an improvement in Washing Machines, Serial No. 568,158, was filed in the United States Patent Office on or about the 14th day of June, 1922, being duly sworn, deposes and says that the subject-matter of the foregoing amendment was part of his invention, was invented before he filed his original application, above identified, that such invention was not known or used before his invention, was not patented or described in any printed publication in any country more than two years before this application, was not patented in a foreign country on an application filed by him or his legal representatives or assigns more than twelve months before this application, was not in public use or on sale in this country for more than two years before the date of this application and has not been abandoned.

Howard F. Snyder

Subscribed and sworn to before me this 21st day of January, 1923.

Notary Public.

My Commission Expires July 4th, 1924

1123

Paper No. 6

DEPARTMENT OF THE INTERIOR
UNITED STATES PATENT OFFICE

WASHINGTON, October 2, 1923

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

PATENT OFFICE OCT 2 1923 FILED

Please find below a communication from the EXAMINER in charge of the application of

Howard F. Snyder, filed June 14, 1922, Ser. No. 568,158
Washing Machines

Thomas E. Robertson
Commissioner of Patents.

In response to the amendment filed Aug. 30 1923:

Claims 1, 2, 3, 4, 5, 6, 8, 10, 11, 30 and 31 are rejected in view of

Kiehle, Mar. 20, 1877, 188,470, (259-101).

Claims 7, 23, 26, 27 and 28 are rejected for reasons of record. If applicant has invented a driving mechanism he should not claim it in alleged combination with the thing driven. It is well known that it is old to provide means for providing a quick throwing into and out of connection between a motor and a thing driven without stopping the motor. As an example see Mills et al. of record.

Claims 34, 35, 36, 37, 38 and 39 are for the same subject matter as claims in applicant's case 596,278 which is in interference. Applicant should transfer these claims to the above named case.

Claims 40 to 47 inclusive are rejected as not being readable on applicant's disclosure. Figure 4 of applicant's drawing shows that the wings 54 are not connected to the central

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stem. These wings are not lobe-shaped.

Claim 58 is rejected in view of

Pratt et al., Oct. 30, 1888, 392,165, (259-101).

Claim 59 is rejected in view of

Hirschy, Aug. 7, 1923, 1,464,362, (259-101).

Claims 60 and 61 are rejected in view of Hirschy of record.

Examiner, Div. 25.

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PATENT OFFICE

JUL 22 1924

IN THE UNITED STATES PATENT OFFICE

In re application of
HOWARD P. SNYDER,
Serial No. 568,188,
Filed June 14, 1922,
Div. 25, Room 315.

WASHING MACHINES

AMENDMENT

July 19,1924.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In response to the Office Action of Oct. 8, 1923, in the above entitled application, the applicant amends as follows:

Page 2 of the specification, line 10, after "upstanding" insert or depending; same line, after "dollies" insert of the usual construction; line 11, after "bottom" insert or top, respectively; line 13, after "operation" insert and the rotational or rubbing contact of the ordinary dolly; line 15, cancel the first word and substitute In my invention; same line, cancel "in my invention" and substitute irrespective of the upper or lower end position of the agitator therein; line 18, after "condition" insert in the liquid; line 23, after "tub." insert Same is in the form of the invention illustrated, wherein the liquid impelling blades are disposed at the bottom of the tub, the action of the agitator on the liquid is to constantly press the clothes upwardly in a swirling formation so that they are maintained in substantial suspension in the liquid above the blades.

Page 3, before the first line thereof insert the following: One of the principal objects of this invention resides in providing this improved method of and apparatus for cleansing fabrics without bringing them into substantial rubbing contact with the walls of the tub or the liquid agitating mechanism. Line 5, cancel "outward"; line 6, change "upwardly" to outwardly. Page 3, line 9 from the bottom, change the semi-colon to a period. Cancel

568,188

the word "to", substituting therefor Still further objects of this invention reside in providing a novel construction of agitator blade; and in further providing;

Page 4, line 3, cancel "accomplishes" and substitute therefor provides; line 3, cancel "result" and substitute method of cleaning fabrics.

Page 6, line 4, change "On" to In; line 7, change "rotatively" to rotatably.

Page 7, line 3 from the bottom, after the word "omitted" insert the following: For the purpose of exemplifying my invention, the gyratator, an impeller is disclosed and described as mounted on the tub for support. Herein it is shown as projecting upwardly through the bottom of the tub, but it must be evident that all desirable arrangements are within the contemplation of this invention, such, for instance, as the mounting of the ~~doily or agitator~~ impeller so as to depend into the liquid from the upper portion of the tub ~~with a corresponding convergement of surrounding inclined tub sidewall~~ thereby bringing about the consequent reversal in the flow of the fluid through the tub. Thus, as modified, the flow will be radially outwardly and thence downwardly, and then inwardly and upwardly toward the center of the gyratator.

Page 7, line 3 from the bottom, change the word "The" to In the present disclosure the.

Page 8, cancel the subject-matter beginning with the words "The gyratator" in line 4 and ending with the words "the drawing" in line 18, and substitute therefor the following:

The gyratator is of ~~sheet~~ metal, ~~preferably aluminum~~, or other suitable material, and is of generally circular form when viewed in plan. It comprises an annular, trough-like or dish-shaped portion 54, the central or inner portion of which merges in a continuous concave curve into a central upstanding stem portion 53 which tapers upwardly and terminates in an upper rounded end. The outer peripheral edge of the trough-like portion 54 extends outwardly and upwardly in a concave curve 55 which is continuous with the dished curve of the portion 54.

The gyratator is provided with liquid impelling means, one form and arrangement of which is illustrated in the drawings.

Extending in spaced position radially from the central stem or dome 53 are a plurality of flat, vertically projecting blades, wings or flanges 56 of the shape shown in Fig. 4 of the drawings. The projecting surfaces of these blades taper or incline inwardly in a general direction from their outer edges to the trough-like portion of the gyratator. They extend from the outer edge of the upwardly inclined portion 55, across the dished portion 54, across the central or trough-like portion thereof, and thence upwardly vertically along the sides of the central upstanding stem 53 to a point approximately half way up the sides thereof. At this point the blades merge into the upper rounded end of the stem. The remaining or upper half of the stem is free of blades and forms a smooth, continuously flowing curve at the apex 57.

These blades 56 are of substantial height at their outer portions, so as to project well into the cleaning fluid. The blades incline or curve downwardly and inwardly toward the central axis of the agitator, that is, to the sides of the stem where they merge into the stem. As shown in Fig. 4, the blades extend across the dish-shaped member at the lower ends in left-hand form and the upper surfaces of the wings or blades extend considerably above the dish-shaped member to provide sufficient blade surface to impart a considerable force or throw to the water in the direction outwardly and somewhat parallel to the axis of rotation of the gyratator, as hereinbefore described. It is to be noted that the outer inclined portion 55 of the dish-shaped member assists in this movement and that this directional flow is augmented by the inclined walls 42 of the surrounding trough or tub. The force imparted to the water is sufficient to cause the water to flow upwardly to the very top of the tub, as shown in dotted lines, Fig. 1. The downward flow at the upper central portion of the tub prevents the overflow of suds.

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Page 8 of the specification. Line 14, after the word "central" insert stem; same line, cancel the words "of the conoid" and substitute therefor the word thereof; same page, last line, insert the following: While this embodiment illustrates the invention, it is to be understood that the gyrator may be located at the top of the tub and in depending position from the top or cover thereof.

Page 9 of the specification, line 1, at the end of the line insert the word key; line 7, change the numeral "89" to 88; line 80, change the word "belt" to bell; page 11, line 4, from the bottom, after the word "nozzle" insert the numeral 108;

Page 12, line 4, change "than" to then; line 5, correct the spelling of the word "periphery"; line 7, change "than" to then; line 13, after the period insert the following - As a result of this action imparted to the cleansing liquid by the gyrator, the water in turn imparts a similar action to the fabrics. Goods are thus whipped, whirled and dashed around in the sieving, whirling, turbulent action set up by the gyrator. Thus the fabrics are given a quick, snappy, sieving, whirling, reversing double action, produced by the gyrator, doubling the clothes first one way and then the other until every thread in the fabric is acted upon an untold number of times, somewhat like the cracking of a whip-lash in all directions.

Kindly cancel claims 1 and 2 and substitute the following:

1. In a washing machine having a tub for containing a washing fluid and goods or fabrics to be washed, a gyrator in the tub, means for reversibly rotating said gyrator, said gyrator having means extending therefrom and acting upon the fluid to cause a substantially gyratory movement of the fluid and goods or fabrics in the tub.

2. In a washing machine having a tub for containing

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a washing fluid and fabrics to be washed, a gyratator in the tub, means for rotating said gyratator, said gyratator having blades extending from a fixe thereof and arranged to effect a substantially gyratory movement of the fluid and fabrics in the tub.

Amend claim 3 as follows:

Line 1, after "machine" insert a comma and cancel the words "comprising a driving power"; line 2, cancel "means"; line 3, after the word "tub" insert the following - power means in addition the same; line 4, cancel "upstanding flanges" and substitute blades of substantial depth in a direction axially of the gyratator and.

Amend claim 4 as follows:

Line 1, cancel "driving power"; line 3, cancel "and", second occurrence; same line, after "gyratator" insert the following - and power means for actuating the same; line 4, cancel "flanges" and substitute substantially deep blades; same line, after the word "operative" insert the following - upon the cleaning substance; line 4, cancel the words "above the gyratator and outwardly"; line 5, cancel the words "and upward swirl of"; line 6, after the word "substance" insert the following - to swirl outwardly and axially away from said gyratator.

Amend claim 5 as follows:

Line 3, after the word "gyratator" insert actuated by said power means and; and, after the word "having", same line, insert the word bends; line 5, change the word "upward" to vertical.

Amend claim 7 as follows:

Line 3, change the word "gyratator" to agitator; line 5, change the word "gyratator", both occurrences, to agitator; same line, after the word "comprising" insert outwardly and

radially projecting; line 7, after the word "substance" change the comma to a period and cancel the remainder of the claim.

Amend claim 8 as follows:

Line 3, cancel "an upwardly" and substitute a portion of its walls inclining substantially outwardly; line 4, cancel the words "inclined portion"; line 5, after the word "cleaning" insert substance; cancel the last line of claim 8 and substitute - in a direction substantially parallel to said inclined portion of said tub walls.

Amend claim 10 as follows:

Line 3, cancel the words "an upwardly" and substitute relatively smooth walls inclined outwardly; line 4, cancel the words "inclined smooth portion"; at the end of line 4 insert actuated by said power means and.

Amend claim 11 as follows:

Line 4, change the word "upwardly" to outwardly; same line, cancel the word "portion" and substitute - wall and an adjoining vertical wall; line 5, cancel "for forcing said"; cancel line 6; line 7, cancel the word "portion"; cancel line 8 and also line 9 and substitute - a swirl of said materials and cleaning substance toward said inclined wall, then along the vertical wall of said tub.

Cancel claim 23 and substitute the following:

23. In a washing machine, the combination of a tub having inner walls substantially free from inner projections, an agitator on said tub and projectible into the fluid therein, means to actuate said agitator, blades radially arranged on said agitator and constructed and arranged to project in a direction parallel with the axis of angular movement of said blades to thereby project fluid from said blades toward said side walls and in a direction substantially parallel thereto.

Amend claim 26 as follows:

Cancel lines 5 and 6 thereof and substitute - belt

and a belt guard movably mounted on said tub in position to shield said belt from the operator, said guard having means adapted to be pressed against the belt by the weight of said guard to tighten said belt.

Amend claim 27 as follows:

Cancel lines 5 and 6 thereof and substitute - and a guard pivotally supported on said tub in position to protect the user from injury from the belt, and provided with a belt tightener pressing normally against said belt.

Amend claim 28 as follows:

Line 5, cancel the word "movable"; and after the word "guard" insert the following - mounted movably on said tub in position to prevent the user from injury from said belt, said guard.

Amend claim 30 as follows:

Line 2, after the word "gyratator" insert extending thereby and; line 3, after the word "on" insert the following - and projecting above; after the word "portion," cancel the words said base portion and; line 4, cancel the words "means operating above the base portion".

Amend claim 31 as follows:

Line 2, after the word "gyratator" insert the following - extending thereby and.

Reconsideration of the Examiner's action in regard to claims 24 to 30 inclusive is asked. These claims are not properly introducible into applicant's copending application 806,878, for the reason that this latter application is confined to a construction wherein the base of the tub is provided with a sunken portion or receptacle into which the gyratator is adapted to fit so that the dished portion of the gyratator is substantially in the same horizontal plane or

registers with the upper portion of the sunken wall of the tub. On the other hand, the present claims are concerned with the peculiar conformation of the gyratator blades. The Examiner kindly bear in mind that the present application is in a way the parent application because it was filed at an earlier date than the co-pending serial number 586,878.

Kindly cancel claims 40, 41, 42, 43, 44, 47, and 48.

These claims are cancelled without prejudice inasmuch as applicant will desire to contest later the Examiner's stand that these claims are not properly introducible into this application. Inasmuch as claims 45 and 46 are clearly readable on the structure of the Unruth patent, Samuel Unruth, No. 490,483, issued June 10, 1925, it is clear that the Examiner now cannot refuse a declaration of interference with this patent on claims 45 and 46, the same corresponding to claims 6 and 7 of patent 490,483. Accordingly, an interference is asked on these two claims. The Examiner will note that the specification of the present application has been slightly reworded to bring out the exact similarity of details of construction with that of the Unruth patent. As a matter of fact, the constructions are substantially identical, and the claims 6 and 7 granted to Unruth are properly construable as reading upon the above application. And, therefore, applicant desires to have these claims awarded to him in an interference contest.

Cancel claim 52 and renumber the other claims accordingly.

Claim 51, line 5, after the word "in" insert the word --exactly--.

With the exception of claim 52, which has been can-

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called, claims 40 to 57 have been retained in this application especially in view of the amendments thereof to bring out more clearly the exact similarity in construction between the present application and the construction shown in the patent to Unruth. In view of this presentation of the case, reconsideration of the rejection of claims 40 to 57 inclusive, now renumbered, is asked.

Kindly amend former claim 36 as follows:

Line 5, before the period insert and means cooperating with the inclined portion for causing the contents of the tub to travel upwardly inwardly

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Amend claim 39 as follows:

Line 3, after the word 'material' insert a comma; same line, cancel the word 'and'; line 3, after the word 'shallow' insert the following - and an agitator rotatably mounted in the bottom of said tub, said agitator constructed and arranged to circulate the liquid radially, outwardly and in a direction substantially axially of said agitator,

C-1

Amend claim 60 as follows:

Line 3, cancel the word "being."

Amend claim 61 as follows:

Line 3, change the word "portion" to wall; cancel lines 3, 4 and 5 and substitute the following - extending substantially parallel with the axis of rotation of the agitator and with the inclined wall of the tub to circulate the liquid and material substantially axially of the agitator.

C-2

Please add the following claims:

64. The process of washing fabrics and the like in a tub containing washing fluid in which the fabrics are placed, which consists in causing the liquid quickly to twist and reverse the fabrics and whip them in various directions in the fluid, so as to repeatedly stress the fabric threads while causing the fluid to sieve through the meshes of the

C-3

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fabrics without rubbing the fabrics against hard objects.

55. The process of washing fabrics and the like, which consists in setting up violently flowing, tortuous currents in a body of cleaning liquid, and in maintaining the fabrics substantially suspended in such liquid so as to prevent contact with hard surfaces, whereby said fabrics are acted upon by said currents and caused to twist and turn quickly in various directions while the liquid moves through the meshes of the fabrics, whereby to effect a thorough cleaning of said fabrics without subjecting the same to rubbing contact against hard objects.

56. The process of washing fabrics and the like in a tub containing cleaning liquid in which the fabrics are placed, which consists in agitating the liquid in violently flowing, quickly reversing, tortuous paths so as to cause the fabrics suspended therein quickly to twist, reverse, and be doubled first in one direction and then in another, whereby to clean the fabrics without rubbing contact against hard objects.

57. In a washing machine, the combination of a tub adapted to contain cleansing liquid, means carried by said tub for agitating said liquid, said means and tub being constructed and arranged to cause tortuous currents to flow through said liquid in predetermined paths disposed to maintain the fabrics in said liquid substantially out of contact with the tub and agitating means, and being constructed and arranged to cause said fabrics to be twisted, whirled and doubled first in one direction and then in the other, whereby to thoroughly clean said fabrics without injurious rubbing contact against hard surfaces.

58. In a washing machine, the combination of a tub having smooth inner walls and adapted to contain cleansing liquid, a dolly mounted on the tub so as to project a fixed, predetermined distance, into the cleansing liquid, means for operating said dolly, liquid agitating blades on said dolly constructed and arranged to set up turbulent currents in said body of liquid so as to maintain

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the fabrics in said liquid out of contact with the outer peripheral bladed portions of said dolly and adapted to gyrate said fabrics through said liquid whereby to clean the same.

59. An agitating element for washing machines, comprising an agitator having a substantially flat outer surface and a plurality of liquid-impelling projections thereon radiating in spaced relation from the center of the agitator, said projections tapering inwardly in extent of projection, from their outer portions.

60. An agitating element for washing machines, comprising an agitator having a substantially flat outer surface and a plurality of liquid-impelling projections thereon radiating in spaced relation from the center of the agitator, said projections inclining inwardly in extent of projection, from their outer portions and the central portion of said agitator within said projections being free of water impelling projections.

61. An agitating element for washing machines, comprising a plate, and blades radiating in spaced relation from the face of said plate, said blades projecting transversely from the face of the plate and tapering in extent of projection from the outer periphery of the plate toward the axis of rotation of the plate.

62. An agitating element for a washing machine, comprising a disc and blades radiating in spaced relation from the face of said disc, said blades projecting transversely from the face of the disc and tapering in extent of projection, from the outer periphery of the disc toward the center thereof, said central portion of the disc being devoid of blades.

63. In a washing machine, the combination of a tub for containing cleaning fluid and fabrics to be washed, an agitator carried by said tub and mounted thereon so as to project into the fluid therein a predetermined distance, power means for reversely rotating said agitator, and fluid-impelling blades radially mounted on said agitator and of substantial depth so as to project well

into the fluid, thereby to cause said fluid to flow in turbulent paths away from said agitator at the peripheral portions thereof in a direction substantially parallel to the direction of the projection of said blades into said fluid.

64. In a washing machine, the combination of a tub having inner walls substantially free from fabric-rubbing projections, and adapted to contain washing fluid and fabrics to be washed, an agitator adapted to project into the fluid in said tub to agitate said fluid, power means to actuate said agitator, said agitator having a plurality of blades thereon radiating from a common center and increasing in depth of projection into the fluid as they increase in radial distance from said common center whereby to cause a tortuous flow of currents of fluid from said agitator outwardly and away from said blades, then inwardly and toward the central axis of rotation of the blades.

65. In a washing machine, the combination of the tub having inner walls substantially free from fabric-rubbing projections, and adapted to contain washing fluid and fabrics to be washed, an agitator adapted to project into the fluid in said tub to agitate the fluid, power means to actuate said agitator, said agitator having a plurality of blades thereon, radiating from a common center and increasing in depth of projection into the fluid as they increase in radial distance from said common center, and said agitator being devoid of blades at such common center, whereby to cause a tortuous flow of currents of fluid from said agitator outwardly and away from said blades, then inwardly and toward the common center of said blades.

66. In a washing machine, the combination of a tub having inner walls substantially free from inner projections, an agitator projectible into the fluid thereof, means to actuate said agitator, liquid impelling means radially disposed on said agitator and extending parallel to the side walls of said tub, said means being adapted on rotation to direct the fluid outwardly in a path sub-

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stantially parallel to the side walls.

67. In a washing machine, the combination of a tub having inner walls, substantially free from inner projections, an agitator projectible into the fluid thereof, means to actuate said agitator, liquid impelling means radially disposed on said agitator and extending parallel to the side walls of said tub, said liquid impelling means being constructed and arranged on rotation to direct the fluid in a curvilinear path outwardly and nearly parallel to the said walls of the tub.

68. A washing machine, comprising a tub for containing a washing fluid and fabrics to be washed, an agitator carried by said tub and adapted to rotate in the fluid therein, means to reversely rotate said agitator, and fluid-impelling means carried radially on said agitator and of substantial depth in a direction axially of said agitator, whereby to project the fluid outwardly and substantially axially of said agitator a distance substantially equal to the depth of the tub taken on a line parallel to the axis of the agitator.

69. A washing machine, comprising a tub for containing washing fluid and fabrics to be washed, an agitator carried by said tub and projecting through an end thereof so as to rotate in the fluid in said tub, means to reversely rotate said agitator, and fluid-impelling blades carried radially on said agitator and of substantial depth in a direction axially of said agitator whereby the fluid in said tub is projected both outwardly and in a direction toward and substantially to the opposite end of said tub and then inwardly and toward the central point of radiation of said blades.

70. A washing machine comprising a tub having substantially smooth inner walls, an agitator disposed at the bottom of said tub and having liquid impelling means facing toward the top of the tub, said liquid impelling means being constructed and arranged to constantly press the fabrics in the liquid substantially

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upwardly away from said agitator despite the weight of said fabrics.

71. An agitating element for a washing machine comprising an agitator having a substantially flat face, and centrally arranged dome having a substantially smooth, substantially rounded top, and a plurality of liquid impelling members radiating from said dome.

72. A washing machine comprising a tub, an agitator disposed in the bottom thereof, means for actuating said agitator, said agitator having a centrally disposed dome provided with a relatively smooth, substantially round top and a plurality of liquid impelling members radiating from said rounded top.

73. In a washing machine, the combination of a tub, an actuating shaft upstanding through the bottom of said tub, a block on said shaft above the tub bottom and an agitator having a centrally disposed upstanding dome and liquid impelling means radiating therefrom, said dome being provided at its underside with a socket adapted to fit over said block.

74. In a washing machine, the combination of a tub, an actuating shaft upstanding through the bottom of said tub, a block secured to said shaft above the tub bottom and an agitator having a centrally disposed upstanding dome and liquid impelling means radiating therefrom, said dome being provided with a socket to receive said block for forming a driving connection between said shaft and agitator.

ARGUMENT

Claims 1 and 2 have been cancelled and for them are substituted new claims 1 and 2. These new claims are free of the reference to Kiehle No. 15,870, for the reason that such patent fails to show a gyratator power driven and having blades extending therefrom to act on the fluid and cause a substantial gyratory movement of the gluid in the tub. In the Kiehle patent the blades are not of substantial depth. Furthermore, the agitator C is not power driven as the Examiner apparently thinks.

Claim 3 has been slightly amended to bring out one of the features of the novel gyratator blades, to wit: the fact that the blades project a substantial depth in a direction axially of the gyratator. This is not true of Kiehle, which neither shows a power drive gyratator nor one having blades as described in this claim.

Claim 4 is free of this reference for the same reason.

Reconsideration of the rejection of claim 5 is asked for the same reasons as were urged in response to the rejection of claim 4. This claim 5 has been slightly amended to bring out the fact that the agitator is power driven and also that it has deep liquid impelling blades.

Reconsideration of rejection of claim 6 is asked as amended. The patent to Kiehle does not show a gyratator or an agitator element power driven. Nor does it show such agitator provided with upstanding liquid impelling flanges.

Claim 7 has been amended to avoid the objection and also rejection cited by the Examiner thereagainst. In other words, the element constituting the disconnecting mechanism has been removed from the claim. In addition, the claim has been altered to recite the fact that the liquid impelling flanges project both outwardly and radially to thereby cause

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the gyration of the liquid in the tub.

Claim 8 is not met by the patent to Kiehle. This patent fails to show a power actuated agitator and also fails to show the inclined walls of the tub. The vertical walls of this patent in no sense can be termed inclined outwardly. They are merely vertical. In contra distinction to this construction, applicant presents the outwardly inclined wall portion 48, which are in a true sense outwardly inclined.

Claims 10 and 11 have been slightly amended to bring out more clearly the inclined feature of the said walls plus the fact that the agitator is power driven. This truly and completely distinguishes from the patent to Kiehle.

Claim 25 has been cancelled.

Claim 26, 27 and 28 have been amended to eliminate the objectionable features thereof stated by the Examiner; to-wit, the generic combination of a washing machine element and a disconnectable drive therefor. The claim amended now brings out the intimate relation of the tub, the agitating element, the belt drive for the agitating element that is on the tub, the guard for the belt drive which is located to protect the user of the tub from injury, and in addition, the fact that this guard is constructed and arranged to provide a certain pressing element for the belt. This is certainly a valid combination and is entitled to protection. The pertinency of the Mills patent cited by the Examiner is not apparent, and therefore, if the Examiner persists in his citation of this reference against these claims, it is requested that he set forth with greater particularity the applicability of this patent.

Claims 30 and 31 have been amended to set forth that the gyratator is power driven. This is not so with the Kiehle

patent. Furthermore, the claims bring out the fact that the gyrator has upstanding liquid impelling blades thereon adapted to produce a gyratory movement of the contents of the tub. This is not true of the patent cited against the claim.

The Examiner is requested to review and reconsider his attitude in regard to claims 34 to 39 inclusive. The reasons for retaining these claims in this application have been heretofore set forth and will not be repeated at this point.

As has also been explained before, all but two of claims 40 to 46 have been cancelled without prejudice. Claims 45 and 46 have been retained and an interference asked on these claims.

In regard to claims 48 to 57, it might be stated that claim 58 thereof has been cancelled, the remaining claims however, are retained in the application. And in view of the amendation of the specification, it is now asked that the Examiner reconsider his rejection of these claims as unwarranted. If the Examiner will read the amended specifications in the light of the drawings, he will see the applicability of the structure therein disclosed, and recited, and the manner wherein it reads upon these duly presented claims 48 to 57 inclusive.

Claim 58 has been amended to distinguish from the patent to Pratt, No. 393,135. This patent shows no means for causing the contents of the tub to flow upwardly along the inclined walls thereof.

Claims 59, 60 and 61 have been amended to present more clearly the invention set forth in the application.

In connection with these claims, an affidavit under Rule 75 is submitted herewith overcoming the patent to Hirschy No. 1,464,362.

The Examiner will readily appreciate that the patent to Hirschey did not and does not anticipate the subject-matter of claims 59 to 61. However, in order to remove this reference, the affidavit overcoming it has been presented.

Substitute claim 33 brings out the fact that the liquid-impelling blade causes the water to travel in a curvilinear path somewhat parallel to the sides of the tub walls. This construction has not been touched in any of the art of record.

New claims 54 to 56 include the novel process presented in this application, wherein, for the first time in the washing machine art there has been disclosed a process for washing fabrics, including delicate fabrics, by means which causes the water to travel in certain predetermined paths described in the claim; which causes the water in turn to act upon the fabrics suspended in the water and cause the fabrics to move about in certain predetermined paths described in the specification, thereby to bring about the thorough cleansing of the fabrics. The Examiner will note that these claims clearly set forth the fact that the washing operation is brought about in a manner so that the fabrics are not contacted with a rubbing force against the inner walls of the tub or the agitating mechanism itself. In this manner the delicate fabrics or other fabrics are saved from the wear which is usually incident to washing machine operation.

In reference to the prior art concerning these process claims, it is pointed out by applicant that Schneider No. 1,883,536, is totally irrelevant for the reason that the Schneider disclosure depends for its efficacy upon the rubbing contact of the propeller blades against the clothing. In other words, the propeller blades of the patent cause the clothing to travel in a disclosed path denoted by the arrows in Figure 1 of the patent. The other patents on record disclose construc-

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tion wherein the agitating element strikes against the fabrics and impels them against rubbing projections or abutments within the tub. Such, for instance, is the construction shown in the patent to King, No. 118,606. With regard to the patent to Davis, No. 1,240,825, it is pointed out that by reason of the slidable connection between the agitator 3 and the shaft 3, the agitator is mounted so that it will slide down and make rubbing contact with the fabrics in the tub. In other words this Davis patent also contemplates the washing action to be brought about by rubbing contact of the agitator 3 with the clothes. It is true that the Davis patent also mentions an incidental washing of the fabrics by means of the inward turn of the washing liquid, but that is merely incidental to the main rubbing action of the agitator 3.

New claim 87 brings out one of the novel features of the washing machine construction wherein the current and particularly the agitator herein referred to as the gyrator, is constructed and arranged to maintain the fabrics suspended in the cleansing liquid and out of contact with the agitator blades. During the suspension of the fabrics, the same are subjected to violent, tortuous liquid current, which whips the fabrics back and forth and cleanses them without contacting them with the hard walls of the tub or agitator blades.

New claim 88 presents a similar construction to that disclosed in 87 except that the dolly or agitator is set forth as having a fixed, predetermined position in the tub. This claim is broad enough to include the dolly projecting either from the bottom of the tub or depending downwardly therefrom.

New claims 89, 90, 91 and 92 are drawn broadly and specifically to the agitator element itself. And particularly with reference to the construction of radial blades thereon, which blades are set forth as projections from the face of the agitating element in a manner as to taper from the outer

edge of the agitator inwardly in a direction toward the center. In certain of the claims the central portion of the agitator is described as being free of blades, whereby the prevent the fabric from being contacted and drawn into contact with the blades at this point. It will be understood that these claims are broad enough to include an agitating element wherein the central portion is provided with a depressed zone free from blades or with a raised, knob-like or stem-like portion, the upper portion of which would be free from blades, as in applicant's construction.

New claim 64 brings out the point that the agitator blades project into the body of the liquid therein, that is in the tub, and increase in depth of projection therefrom as they project outwardly on the radius of the agitating element, whereby to set up tortuous currents in the liquid which flow outwardly and away from the blades, then inwardly and toward the central axis of rotation of the blades. This subject-matter is not present in the patent of Davis, 1,840,838, for the reason that Davis shows merely straight sided bars 4 and 6 projecting from the face of the agitator. This construction will not cause the flow of the liquid as described in this claim, Davis' allegation in his patent to the contrary, notwithstanding. The tapering, projecting feature of the blade is necessary to the projection of the liquid in the tub as described in this claim, and inasmuch as the patent of Davis signally fails to disclose such tapering arrangement of blades, the patent in no wise anticipates the substance of this claim, and hence is not a valid reference therefor.

New claim 65 is somewhat like new claim 64, and is accordingly free of the patented art cited herein, including the patent to Davis for the reasons as hereinbefore set forth in regard to the irrelevancy of the Davis patent as a citation

against claim 64. Claim 65 includes the feature that the central zone of the agitator is free of blades or projections, which construction assures that the fabrics will not contact and be entangled with blades if they were at this zone.

Now claim 66 is drawn about along the same line as the prior two claims. It recites, for instance, that the blades which radiate from the agitator extend or project in a direction parallel to the side walls of the tub, and that when they rotate they will pass or project the fluid outwardly in a path substantially parallel to the side walls. The patent to Davis contemplates no such structure. The novelty of this claim resides in the fact that the projection of the blades is somewhat parallel to the side wall and that due to such projection, the liquid is passed or thrown in a path parallel to the side wall. In the Davis patent the liquid is thrown out radially in a direction transverse to the side walls of the tub. And the Davis patent is no anticipation.

Now claim 67 differs slightly from 66 in that it recites that the blades are arranged to throw the liquid in a curvilinear path outwardly and tangent to the side walls of the tub. This is a more specific repetition of the invention, that is, it recites with greater particularity the path of travel of the liquid current.

Now claim 68 recites that the projection of the blades is of sufficient extent to project the fluid upwardly and substantially axially of said agitator a distance substantially equal to the depth of the tub. It will be noted that in applicant's construction the current noted by the dotted line extends from the bottom of the tub clearly to the top thereof, whereby to cause a complete torturous circulation of the liquid throughout the extent and depth of the tub. In the patent to Davis there will be no such extended path of travel of the currents of liquid due to the fact, that the shallow, bar-like projections

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of the agitator fans are not sufficient depth to effectually project the liquid any considerable distance in the tub. This full and complete travel of the liquid current, due to the blade depth of the agitator is a very important, and essential feature of applicant's invention, and too much stress cannot be laid thereon.

New claim 69 is somewhat along the lines of claim 67, except that the path of travel of the current is more exactly described to correspond to the dotted line path of travel indicated in Figure 1 of applicant's drawing. Favorable action upon these claims is respectfully urged.

Respectfully submitted,

Wallace R Lane

LRR:LF

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JUL 21 1924

PATENT OFFICE JUL 22 1924 Division 8

IN THE UNITED STATES PATENT OFFICE

In re application of
HOWARD F. SNYDER,
Serial No. 566,158,
Filed June 14, 1922,
Div. 25, Room 315.

WASHING MACHINE

AFFIDAVIT UNDER RULE 75

STATE OF IOWA
COUNTY OF JASPER } ss

Howard F. Snyder, being duly sworn, deposes and says that he is the inventor of the subject-matter disclosed, described and claimed in the above entitled application, and that said application was filed on his behalf.

He further states that he invented the subject-matter of this application and that set forth in the attached amendment, the subject-matter of which is identical with the construction disclosed in the three prints accompanying this affidavit and made a part thereof, prior to February 25, 1922, and that prior to that date he actually constructed in the United States a machine embodying the features of construction corresponding exactly to that disclosed on the prints attached hereto. And that said machine as thus constructed, successfully operated.

The deponent further states that the washing machine which he constructed prior to February 25, 1922, embodied a square, relatively shallow tub, into the lower portion of which projected a power driven agitator, having a dished surface corresponding to and conforming to the disclosure and construction set forth in Figure 4 of the attached cuts, which agitator, in addition thereto, had a plurality of blades, of the design disclosed in Figures 1, 4, 5 and 8 of the attached cuts; in addition thereto the lower portion of the washing machine tub was

provided with an upwardly inclined wall corresponding exactly to the wall disclosed at the numeral 48 in Figure 1 of the attached prints; and that this agitator when reversely located in the tub acted to project the liquid therein, radially outwardly and in a direction substantially axially of said agitator, and in a manner to throw the liquid and the materials in the tub with a substantially gyratory movement as shown in the dotted line in Figure 1 of the prints attached.

And further deponent sayeth not

Howard H. Snyder

Subscribed and sworn to before me this 8th day of July, 1924.

Evangeline M. Ingalsbee
Notary Public.
My Commission expires July 4th, 1927

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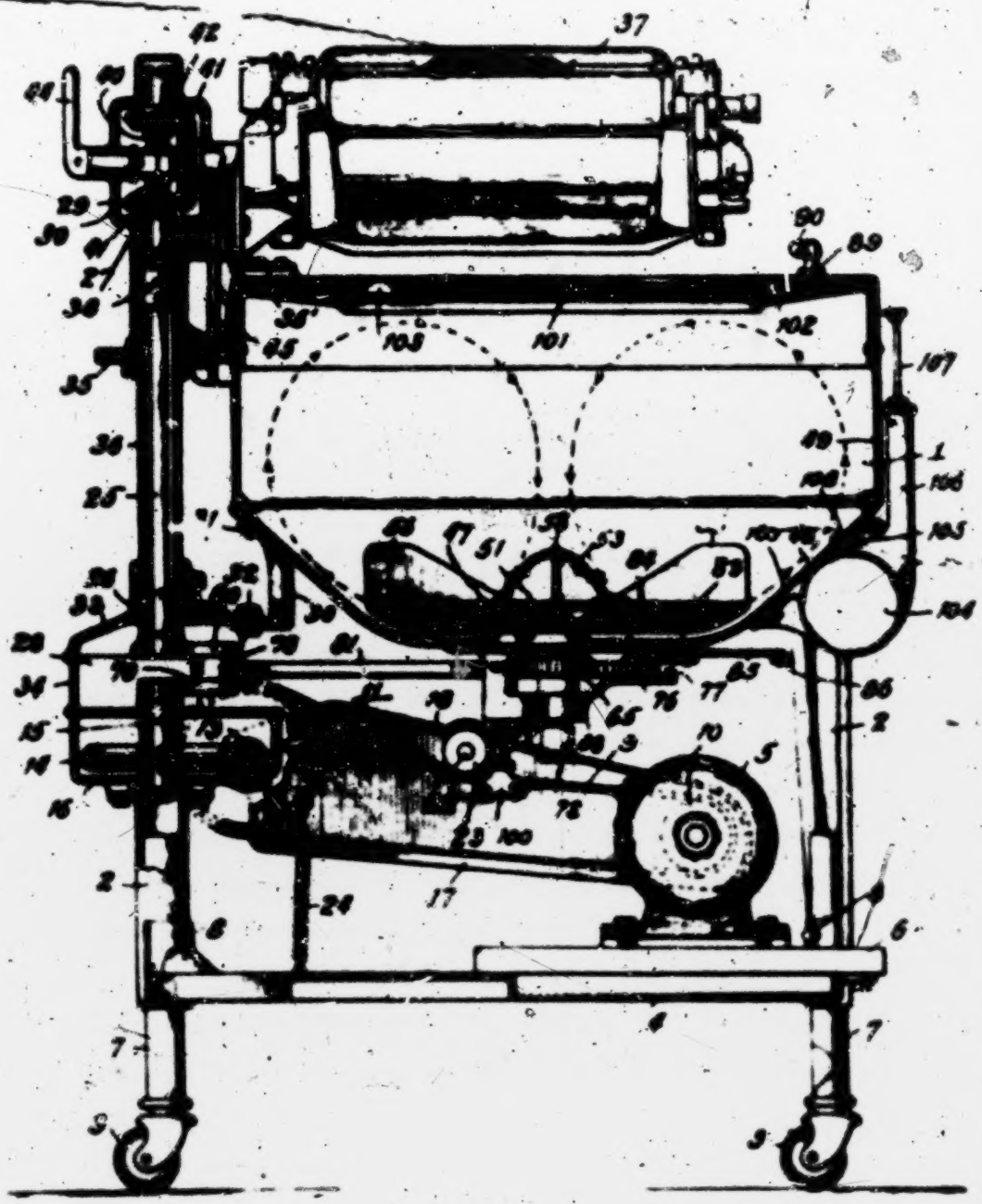
Fig. 1.



Inventor
Howard F. Snyder,
by Wallace R Lane
Atty

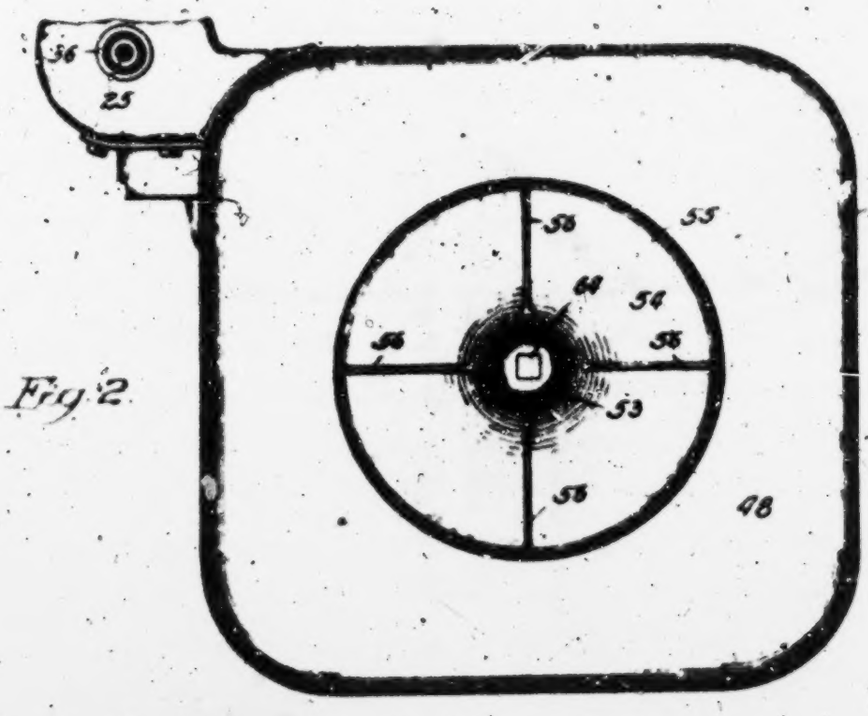


Fig 2.

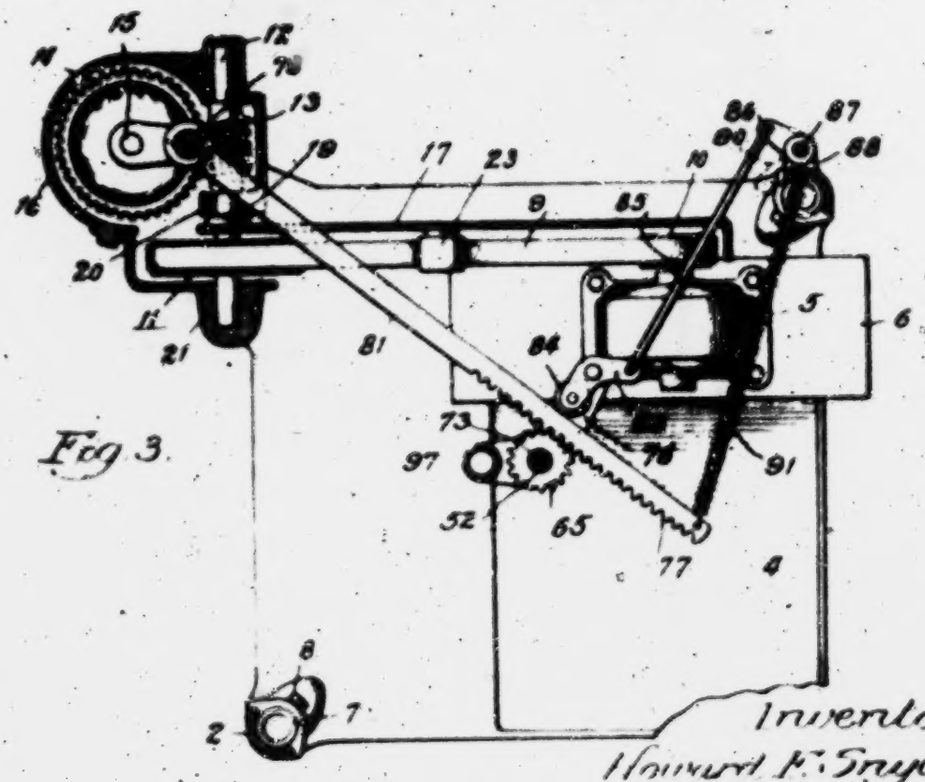


Fig 3.

Inventor:
Howard F. Snyder.
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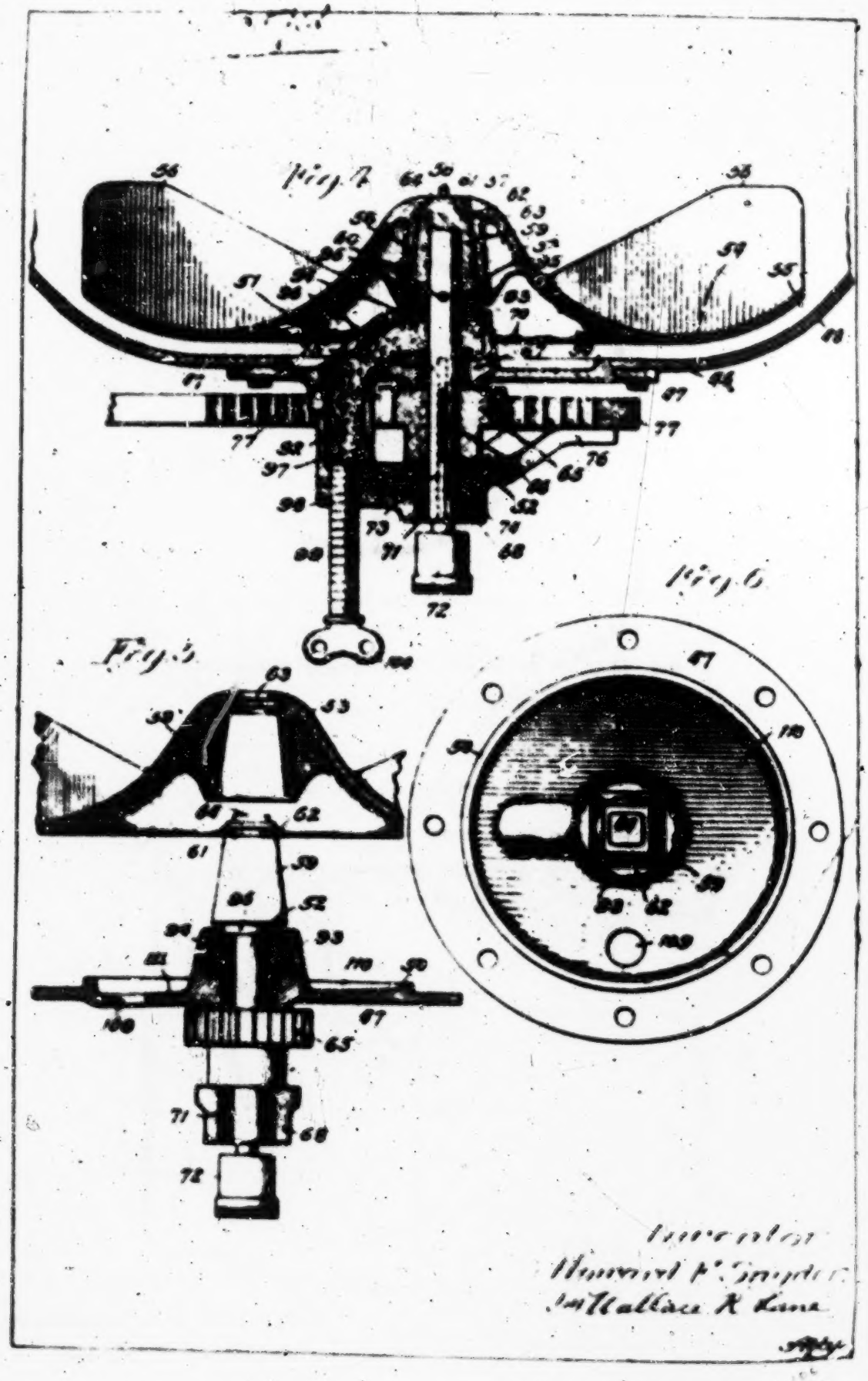

1152

U.S. PATENT OFFICE JUL 21 1924

IN THE UNITED STATES PATENT OFFICE

AFFIDAVIT UNDER RULE 48

STATE OF IOWA }
COUNTY OF JASPER } ss

Howard F. Snyder, whose application for Letters Patent for an improvement in Washing Machines, Serial No. 568,158, was filed in the United States Patent Office on or about the 14th day of June, 1922, being duly sworn, deposes and says that the subject-matter of the foregoing amendment was part of his invention, was invented before he filed his original application, above identified, that such invention was not known or used before his invention, was not patented or described in any printed publication in any country more than two years before this application, was not patented in a foreign country on an application filed by him or his legal representatives or assigns more than twelve months before this application, was not in public use or on sale in this country for more than two years before the date of this application and has not been abandoned.

Howard F. Snyder

Subscribed and sworn to before me this 17 day of July, 1924.

Margaret M. Heathcock
Notary Public.
My Commission Expires July 4th, 1927
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Room 315

JC3:CB

Paper No. 8

DEPARTMENT OF THE INTERIOR
UNITED STATES PATENT OFFICE

WASHINGTON July 28, 1924

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

PATENT OFFICE JUL 28 1924 MAILED

Notice of a communication from the EXAMINER in charge of the application of
Howard P. Snyder, filed June 14, 1922, Ser. No. 568,158
Washing Machines

Thomas E. Robertson
Commissioner of Patents.

In response to amendment filed July 21, 1924:

The affidavit under Rule 75 is insufficient. It does not state that the invention has not been abandoned, and it does not state facts as evidence to show that applicant made the invention prior to February 23, 1922, but merely states applicant's conclusions. Applicant should show drawings made prior to that date or file a photograph of a device made prior to that date or give evidence of other facts to support his allegation.

Claims 1 to 6, inclusive, 8, 10, 11, 30 and 31 stand rejected for reasons of record and in view of

King et al., Aug. 24, 1869, 94,005, (359-109),

which shows a gyrotator which will act as applicant's gyrotator. Attention is called to the depth of the blades of this device.

Claims 7, 28, 36, 37 and 38 are rejected in view of the patent to King et al. and in view of reasons of record.

Claims 34 to 39, inclusive, are rejected as being for the same subject matter as claimed in applicant's allowed application 506,878.

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Claims 40, to 49, 72, 73 and 74 are rejected as not being readable upon applicant's disclosure as explained in the Office letter of October 8, 1943.

Claims 54, 55 and 56 are rejected as being for a process readable upon Ling et al. or Kiehle of record.

Claims 57 to 71, inclusive, are rejected in view of Ling et al.

Applicant appears to have sufficient claims allowed to cover the novelty in the case. See Ex parte Duncan 276 O.G. 807. The claims are too numerous.

If it is not necessary to cite new references in the next action, final action will be taken as set forth in Ex parte Miller 139 O.G. 730.

The examiner repeats the objection to the coined term "gyratator" and rejects each claim in which this term is employed as being in this respect indefinite under the statute.

J. K. Kirkpatrick

Examiner, Div. 86.

Jes

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1155.

IN THE UNITED STATES PATENT OFFICE.

IN THE APPLICATION OF
HOWARD T. SNYDER,
SER.NO. 568,158,
FILED JUNE 14, 1922,
DEV. 28, ROOM 315.

WASHING MACHINES.

AMENDMENT.

In response to the Office Action of July 28, 1924, applicant amends as follows:-

Cancel claims 1 to 7 inclusive and substitute the following claims:-

1. The process of cleansing fabrics in a tub comprising so agitating the washing fluid as to create positively driven violently flowing currents which are caused to move away from and back to the plane of the source of agitation, and also around in one direction in a plane approximately parallel with the plane of agitation, and then caused to move away from and back to the plane of the source of agitation, but around in the reverse direction in a plane parallel with the plane of agitation, so as to bodily and forcibly cause the fabrics in the tub to travel in substantially similar paths, whereby thorough cleansing of the fabrics is effected without substantial contact with rubbing surfaces.

2. In a washing machine a tub for containing a cleansing fluid and fabrics or the like to be

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cleansed, an impeller rotatably mounted in said tub, said impeller comprising a substantially imperforate base member having a projection of substantial depth on one of its faces located contiguous to the periphery thereof, and means for imparting alternate reverse rotations to said impeller, the speed of actuation of the impeller and the depth of the projection being such as to produce within the tub positively driven violently flowing currents of the cleansing fluid which are caused to move upwardly and downwardly and also around the tub in one direction and then around the tub in the reverse direction on one side of the plane of the source of agitation, so as to bodily and forcibly cause the fabrics to travel in substantially similar paths, whereby thorough cleansing of the fabrics is effected without substantial contact with rubbing surfaces.

3. In a washing machine a tub for containing a cleansing fluid and fabrics or the like to be cleansed, an impeller rotatably mounted in said tub, said impeller comprising a substantially imperforate base member provided on one face with an outstanding impelling projection of substantial depth, the depth of said projection being greatest contiguous to the periphery of the base member and decreasing toward the center of said base member, and means for imparting alternate reverse rotations to said impeller, the speed of actuation of the impeller and the depth of the projection being such as to produce within the tub positively driven violently flowing currents of the cleansing

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liquid, which are caused to move upwardly and downward and then around the tub in one direction, and then around the tub in the reverse direction on one side of the plane of the source of agitation, so as to bodily and forcibly cause the fabrics to travel in substantially similar paths, whereby thorough cleansing of the fabrics is effected without substantial contact with rubbing surfaces.

The above three claims, the first one to the process and the last two to the apparatus are those claims which were submitted to the Primary Examiner at an oral interview. The Examiner at that time indicated that he would allow these claims over any art cited in this application. In order to refresh the Examiner's recollection as to the irrelevancy and inapplicability of the patents cited, applicant desires to point out that the subject matter of the above three claims is not met by the patent to King, 94006 for the reason that King discloses nothing more than a dolly E having blades thereon which taper from a maximum height at the center to a minimum height radially outwardly and also discloses a means for rotating this dolly continuously in one direction. A continuous rotation of the dolly in one direction only, will not produce the gyratory effect which forms the essence of applicant's invention.

The subject matter of the above claims is not met by patent to Fichle, 188,670 for the reason that the positively driven liquid impeller E which depends from the top of the tub consists of nothing more than downwardly projecting rod-like stirrers, a cross-section of one of which is illustrated in Figure 8 of the drawings. The function of this stirrer is described on page 1 of the

568 [illegible]

specification as follows:-

> "The stirrer F thus receives a semirotary motion, and, by moving the clothes backward and forward in the tub and against the ribs 8 thereof and ribs 9 of the bottom C, they are thoroughly washed and cleaned. The revolving bottom (C) prevents the clothes from catching against any part of the machine, and at the same time gives enough resistance to the stirrer and the clothes to thoroughly cleanse them."

It will be seen from this disclosure that the so-called revolving stirrer C is not a liquid impelling device, as was cited in the claims, and will not of itself, or in cooperation with the stirrer F produce a circulation of the cleaning fluid as called for by the claims.

The David patent 1,840,826, discloses a circular disk, provided with shallow cleats 6 on one of its surfaces. The essence of this invention resides in forming the inner adjacent ends of these cleats with beveled surfaces 7 and in arranging certain of the opposed ends closer to the center of axis of rotation of the disk whereby to produce a peculiar flow of the washing liquid at the center of axis of the disk. This is set out on page 1 of the specification at lines 79 to 86 as follows:-

> "Because of this peculiar arrangement of rods 4 and 6, the fluid is caused to flow in lines similar in shape to an elongated loop depressed intermediate its extremities. The constantcy of such flow lines eliminates eddies and other current irregularities preventive of a high degree of efficiency."

As explained to the Examiner, the substantially uniform cross-section of the rods 4 and 6, andprimarily the shallowness, constitute the primal distinguishing feature between the Davis construction which will not produce applicant's gyrofoam effect, and applicant's construction, comprising substantially deep liquid impelling blades or

maximum height near the circumference of the substantially imperforate alternating rotary disk on which they are mounted. By reason of applicant's construction, the cleansing fluid is caused to flow in violently flowing gyratory currents which are so vigorous as to positively and bodily impart a similar movement to the clothes being washed, so that the water is sieved through the meshes of the clothes, as such clothes are twisted and turned by the current, - all without substantially rubbing contact with the liquid impeller itself.

Applicant obtains more than a mere circulation, such as is present in Davis. For instance, applicant produces a circulation accompanied by a vigorous turbulent agitation. In the Davis construction, the very shallowness of the cleats 6, and their lack of sufficient height, particularly at their outer ends, eliminates any possibility of this effective gyrofoam cleaning which is applicant's invention herein claimed.

It is noted that the claims 2 and 8 covering the apparatus recite that the currents flow "on one side of the plane of the axis of agitation". This wording is expressly inserted in the claim to distinguish from any possible device of the prior art wherein the cleansing fluid flows from one face of the liquid impeller across the axis thereof through intervening spaces between the impelling blades thereon, and thence through the other side of the liquid impeller, such for instance as in applicant's prior patent 1,301,214. In this prior patent the gyratory effect will not be produced because the washing fluid will be forced across the axis of the liquid impeller through intervening spaces between the radial

liquid impelling blades or arms 24 and 25. This action has been explained to the Examiner in detail.

A proper affidavit under Rule 75 will be submitted by applicant as soon as practicable to carry his date of invention back of the date of filing of the patent to Hirschy, 1,464,362 of August 7, 1923, which application was filed February 13, 1922.

Cancel claim 8 and substitute:-

8. In a washing machine the combination of a tub for containing a cleansing substance and the materials to be cleansed, said tub having an outwardly and upwardly inclined portion, an impeller cooperating with the said inclined portion of the tub to force said cleansing substance and materials to be cleansed outwardly in a direction substantially parallel with said inclined portion, and power means for oscillating said impeller. Claim 6 follows

Claim 4 is not met by Kiehle nor King of record for the reason that Kiehle fails to disclose a tub having a portion of its walls inclined substantially outwardly, which substantial outward inclination of the tub wall is one of the important features of applicant's invention.

In Kiehle there is a mere "draftsman's showing" of the side walls of the tub disposed at the bottom at an imperceptible angle to the vertical. This by no means is such a disclosure as would warrant the Examiner in continuing the citation of this reference against this claim. In the patent to King there is no oscillation of the liquid impeller, which feature is of prime importance in the carrying out of the invention.

Cancel claim 9 and rewrite it as follows, renumbering it as claim 8:-

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(23)

5 ~~4~~. In a washing machine the combination of a tub adapted to contain wash water and goods to be washed, said tub having a flared portion, a liquid impeller in said tub having a depressed portion, said liquid impeller cooperating with said flared portion to swirl said wash water and goods with a substantially gyratory movement, and power means to alternately rotate said liquid impeller.

Claim 5 in part

Claim 5 is not met by King or Kinkle of record for the reason that it recites a liquid impeller having a depressed portion and a flare to the top rail, plus an oscillation of the liquid impeller. These features are not in the two patents cited.

Cancel claims 10 and 11.

Change the numeral of claim 12 to 6 and amend as follows:-

Lines 3, 4 and 5, change "gyrator" to:- liquid impeller.

This claim has been amended to eliminate the Examiner's objection to the term "gyrator". The claim has already been allowed.

Change the numeral of claim 13 to 7 and amend as follows:-

Lines 3, 4 and 7, change "gyrator" to:- liquid impeller; line 4, after "with" insert:- an; line 5, change "flanges" to:- flange; same line, after "depressed" insert:- a; same line, change "portions" to:- portion; same line, change "between" to:- on each side of; same line, change "flanges" to:- flange.

Claim 7 (former claim 13) has been amended to eliminate the objectionable term "gyrator", and also to slightly improve the wording of the claim.

Cancel claims 14 and 15.

Change the numeral of allowed claim 16 to 8 and amend as follows:-

lines 3, 4 and 5, change "gyrator" to:- liquid impeller.

Change the numeral of allowed claim 17 to 9. and amend as follows:-

Lines 2 and 5, first occurence, change "gyrator" to:- liquid impeller; line 5, change "above the gyrator" to:- above the liquid impeller.

Cancel claim 18.

Change the numeral of allowed claim 19 to 10, and amend as follows:

Lines 2 and 4, change "gyrator" to :- liquid impeller.

Change the numeral of claim 20 to 11, and amend as follows:-

Lines 3 and 4, change "gyrator" to:- liquid impeller.

Change the numeral of allowed claim 21 to 12 and amend as follows:-

Lines 3, 4 and 6 change "gyrator" to liquid impeller.

Change the numeral of allowed claim 22 to 13 and amend as follows:-

Lines 3, 4 and 6, change "gyrator" to:- liquid impeller.

The above claims have been amended to cure the Examiner's objection to the word "gyrator".

Change the numeral of allowed claim 24 to 14, and amend as follows:-

Lines 3, 5, 6 and 8, change "gyrator" to:- liquid impeller.

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Change the numeral of allowed claim 28 to 15, and amend as follows:-

Lines 3, 4 7 and 9, change "gyrator" to:- liquid impeller.

These two claims 14 and 15, have been amended by substituting an acceptable word for the word "gyrator".

Cancel claims 26, 27 and 28 and change the numeral of claim 29 to 16 and amend as follows:-

Line 3, change "gyrator" to:- liquid impeller.

Cancel claims 30 and 31, and change the numeral of claim 32 to 17 and amend as follows:-

Line 2, change "gyrator" to:- liquid impeller.

Change the numeral of claim 33 to 18 and amend as follows:-

Lines 2 and 3, change "gyrator" to:- liquid impeller.

Claims 17 and 18 (former allowed claims 32 and 33) have been corrected to cure the Examiner's objection to the term "gyrator."

Cancel claims 34 to 39 both inclusive.

Insert the following claims:-

19. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a substantially cylindrical stem rising from and merging into the central portion thereof and terminating in an upper rounded end, said stem having spaced ribs extending vertically along its sides upwardly spaced throughout the length of said stem and extending outwardly across the dish-shaped member.

20. A [illegible] washing machine comprising

a cup-shaped disk with a frustoconical portion rising from its center having a substantially cylindrical stem projecting centrally therefrom above and terminating in a rounded top, said stem having radial ribs projecting therefrom and extending along the sides thereof, said ribs being tapered throughout their length on said stem and extending in lobe-shaped form across the surface of said disk.

21. An agitating member for a washing machine comprising a cup-shaped disk having a frusto-conical portion rising from the center thereof, the vertical elements of which are concave so that the surface of said portion merges into the surface of said disk, and a rounded upwardly tapering portion projecting above said frusteconical portion and terminating in a rounded surface, and narrow radial wings projecting from said latter portion and extending along the sides thereof and across the surface of said disk and having rounded outer edges merging into the concave surface of said disk.

Change the numeral of claim 40 to 22.

Change the numeral of claim 41 to 23.

Insert the following as claim 24.

24. A dolly for washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle, comprising a circular disk-like member having a stem rising from and merging into its central portion, and ribs extending vertically from the upper end of said stem downwardly therealong and across the surface of said disk-like member.

Insert the following as claim 25.

25. A rotatable agitator for a washing machine adapted to be disposed in a liquid containing receptacle comprising a disk-shaped member having a central upstanding

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tapered stem with a rounded upper end, ribs extending across said dish and upwardly along the side of said stem and having rounded upper edges merging into the rounded surface of said stem.

Add 2.9 Add I² cl. 17

The above claims 19 to 25 are claims 1,3,5,6, 7,8 and 9 respectively of the patent 1,486,483. Reconsideration of the Examiner's declination to declare an interference on these claims, is asked. Particular attention is called to claim 6 which is the claim drawn to the Primary Examiner's attention to the oral interview had. At that time, it was pointed out that applicant's invention most certainly disclosed a dolly comprising an annular trough and a stem rising centrally from said trough, and having radial wings which extend along the sides of the stem and across the surface of the trough. Certainly the top surface of these wings curve downwardly and inwardly. It is not understood how the Examiner can possibly read this claim and not consider it as reading squarely on applicant's drawings. See Figure 4. If there by any distinction between the Unruh disclosure and that of applicant, it has certainly not been brought out in this claim. Applicant has just as much of a stem as has Unruh. Applicant's stem may not be as tall as that of Unruh, but just the same, it is a stem, or whatever term you choose to use to distinguish it, and furthermore the blades project along the sides of the stem just as much in applicant's structure as they do in Unruh's. The extent of projection is relative. In regard to the interpretation of the other Unruh claims and their reading upon applicant's drawings, (see Figure 4) applicant desires to point out that Unruh should by no means be permitted to set up an imaginary point on his dolly where the alleged upstanding central portion 18 begins and a trough

568 of 10[illegible]

wall terminates, when as a matter of fact, the trough wall and upstanding stem are a single and continuous wall member. On the same parity of reasoning, how can the Examiner definitely determine where the stem portion of the Unruh disclosure terminates and where the upper rounded end begins. In Unruh, the bladed portion extends along the stem, but it does not extend along the upper rounded portion. Likewise in the applicant's disclosure the blades extend along the stem, but not along the upper rounded portion. Where the stem ends and the rounded portion begins is a matter of degree, and is so indefinite as to preclude the Examiner from stating that applicant has no stem with a rounded portion with blades extending along the sides of the stem. As a matter of fact, the blades 56 do extend along the sides of the upstanding stem. Because the Unruh patent was applied for as an improvement upon applicant's construction is certainly no ground for permitting Unruh to obtain claims, the breadth of which is wholly incommensurate with the extent of his disclosure. If Unruh obtains claims which can be read by a broad interpretation of langugge upon the Snyder construction, then applicant should have the right to make such claims so as to contest with Unruh the claim of priority of invention of the subject matter covered by these claims. Certain of the claims copied designate the shape of the blades 17 as being lobe-shaped. The Examiner's attention is called to claims 3 and 7. According to Webster's New International Dictionary, the word "lobe" is defined as follows: "A projection or division of a some-what rounded form." Certainly applicant is warranted in considering his projections as being of some-what rounded form. In fact,

they are properly termed lobe-shaped.

It was understood during a recent interview that the Examiner has consented to grant an interference with the Unruh patent.

Cancel claims 42 to 44 both inclusive.

Cancel claims 46 to 49 both inclusive.

Change the numeral of claim 45 to 26.

Reconsideration of claim 26 is asked. This claim sets forth the subject matter of the Unruh claims in a little different language and is certainly readable directly upon the applicant's disclosure.

Change the numeral of claim 50 to 27. This claim has been allowed.

Cancel claims 51 to 72 both inclusive and insert:-

27 50 56. In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator consisting of a substantially disk-like imperforate body and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator.

Kirshey 1464, 362 D 7 Ord.

28 50 51 56. - In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator consisting of a substantially disk-like imperforate body and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator, leaving the central portion of said body free of water impelling projections.

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Add F 8 Cl. 19 - 388

Claims 28 and 29 are clearly patentable over the references of record which fail to disclose the peculiar characteristics of the liquid impelling projections which are of maximum depth contiguous to the periphery and having their free edges inclined inwardly. The central portion of said body free of water impelling projections of claim 29 is also novel.

Change the numerals of claims 73 and 74 to 30 and 31.

Allowance of these claims is asked and in addition, a declaration of the interference with Unruh is requested.

Respectfully submitted:-

Wallace R Lane

Attorney

June 10, 1925.

JUN 12 1925

IN THE UNITED STATES PATENT OFFICE

RE APPLICATION OF
HOWARD T. SNYDER,
SER. NO. 568,158,
FILED JUNE 14, 1922,
Div. 25, Room 315.

WASHING MACHINES

A M E N D M E N T

Hon. Commissioner of Patents,
Washington, D. C.

S i r:

Supplemental to the amendment of June 10, 1925, please amend as follows:

Claim 7, line 4, change "gyratator" to —liquid impeller—.

Present claim 16, lines 3 and 4, cancel "a liquid impeller for giving said substance and material turbulent motion", insert at the end of the claim the shaft extending through said plate and a liquid impeller on said shaft for giving said substance and material turbulent motion,—

R E M A R K S

The foregoing amendment is submitted pursuant to an oral interview had with the Examiner. Claim 16 has been amended to bring out the combination between the plate and the liquid impeller shaft.

In view of the present condition of the case, it is asked that the interference be declared forthwith and any further action be deferred until the termination of the interference.

Respectfully submitted,

568 90

Wallace A. Lane

1170

Div. 25 Room 315 LDC:GB Paper No. 11

Address only "The Commissioner of Patents, Washington, D. C." and not to any official by name

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

All communications concerning this application should give the serial number, date of filing, and name of the applicant

MAILED
JUN 16 1925

Please find below a communication from the EXAMINER in charge of this application

Thomas E. Robertson
Commissioner of Patents

Applicant: E. P. Snyder.

Ser. No. 568,150
Filed June 14, 1922
For washing machines

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

In response to amendments filed June 10 and 12, 1925:

Claims 14 and 15 are rejected in view of the patent to Coffield et al., Mar. 9, 1915, 1,131,666, (74-14-48.6).

The rejected claims read directly upon the reference cited. If the applicant believes he has improved his drive and driving connection over the art cited, he should claim his alleged improvement per se, as mechanical movements have acquired a distinct status as a subject matter of invention.

The remaining claims in the case are allowed.

There are two claims in the case numbered as 23 by an oversight on the part of the applicant. The overlooked claim is in the amendment filed July 21, 1924.

Cancelling of claims 14 and 15 will place this case in condition for allowance.

L. D. C.

J. R. Shakespeare

Examiner, Div. 25.

1171

Div. No. 25.
Room No. 3.

#12

Authority to Make Copies

FEB 19 1926

Feb. 18 1926

Hon. Commissioner of Patents,
Washington, D. C

Sir:—

Please permit Miss A. M. PARKINS, Washington Loan and Trust Building, Washington, D. C. to examine and make copies in

Application of
Interference of } Howard H. Snyder

Improvement in

Filed June 14, 1922 Serial No. 568,158

and oblige

Respectfully,

William R. Dana
Attorney

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IN THE UNITED STATES PATENT OFFICE

In re Application of
EDWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 25, Room 315.

WASHING MACHINES.

AMENDMENT

Hon. Commissioner of Patents,

Present,

Sir:-

Responsive to Office Action of June 16, 1925, applicant amends as follows:

In the Specification, page 3, line 4, after "contents" insert:- in the embodiment illustrated in the drawings.

Page 8, at top of page insert the following as a new paragraph:-

"Fig. 3 is a sectional view showing portions of the operating mechanism."

Page 2 of the Amendment dated July 19, 1924, and filed July 21, 1924, line 8 from the bottom, cancel "sheet".

Rewrite claims 1, 2 and 3 as follows:-

1. The method of cleansing fabrics in a tub consisting in agitating a washing fluid in

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such a way as to create positively driven violently flowing currents moving away from and back to the plane of the source of agitation, and also around the tub in one direction in a plane approximately parallel with the plane of agitation, and then causing it to move away from and back to the plane of the source of agitation and in a reverse direction in a plane parallel with the plane of agitation so as to bodily and forcibly cause the fabrics in the tub to travel in substantially the same paths as the fluid, whereby thorough cleansing of the fabrics is effected without material contact with rubbing surfaces.

Add F' p. 1, 2

2. In a washing machine, a tub for containing a cleansing fluid and materials to be cleansed, a rotatable impeller in said tub comprising a substantially imperforate base, a projection of substantial depth on one of the faces of the base and located contiguous to its periphery, and means for imparting alternating rotations to the impeller, the speed of actuation of the impeller and the depth of the projection being such as to produce, within the tub, positively driven, violent, upwardly, downwardly and circulatory flowing currents of the cleansing fluid moving first in one direction around the tub and then in an opposed direction alternately, on one side of the plane of the source of agitation and in such a manner as to forcibly cause the materials to bodily travel in substantially the same paths as the fluid, whereby thorough cleansing is effected without material contact with rubbing surfaces.

3. In a washing machine, a tub for containing a cleansing fluid and material to be cleansed, a rotatable impeller in said tub comprising a substantially

imperforate base, an outstanding impelling projection of substantial depth on one face of the base, the depth of said projection being greatest contiguous to the periphery and decreasing toward the center of the base, and means for imparting alternating rotations to said impeller, the speed of actuation of the impeller and the depth of the projection being such as to produce, within the tub, positively driven violently flowing currents of the cleansing fluid, which are caused to move upwardly and downwardly and also around the tub in one direction, and then around the tub in the reverse direction on one side of the plane of the source of agitation, so as to bodily and forcibly cause the material to travel in substantially similar paths, whereby thorough cleansing is effected without material abutment with rubbing surfaces.

Add the following claims:-

6. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container, motor-driven means extending through the bottom of the container, by which the impeller is so driven as to violently force water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be suspended by the water and forced in one direction and then another and thoroughly cleaned while thus suspended.

7. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller

er, mounted adjacent the bottom of the container, so constructed and arranged that when water and materials to be cleaned are placed in the container and the impeller is reciprocated, the water will first be violently forced laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed gyratory direction, so that the materials being cleaned will be suspended by the movement of the water, and the water forced through and around the materials to thoroughly cleanse them, while said materials are substantially out of rubbing contact with the mechanical parts of the machine, and motor-driven means for rapidly driving the impeller.

6. A washing machine comprising a container, a rotary reciprocatory dish-like impeller mounted near the bottom of the container, one or more flanges projecting upwardly therefrom, said flanges being so arranged on the impeller that when said impeller is driven, water in the container will be violently forced laterally and upwardly first in one gyratory direction and then laterally and upwardly in an opposed direction, whereby because of the agitation so produced clothes or other materials placed in the container will be suspended by the water out of substantial contact with the container and impeller and thoroughly cleansed while suspended, and motor-driven means extending through the bottom of the container for driving the impeller.

7. A washing machine comprising in combination a container, a rotary reciprocating clothes impeller in said container, the said impeller having an axially extended working surface which is sufficient in extent relative to the depth of the container to positively and vigorously whip the washing fluid laterally and vertically in

an opposed direction, whereby the washing fluid is driven violently through the clothes, and motor-driven means for imparting rapid rotary reciprocative movements to said impeller.

Claim 7, (original 13) line 8, after "depressed" cancel - a; same line before "depressed" insert:-

Cancel claims 14, 15, [illegible] and 26.

Renumber claims 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 17 and 18 as 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 and 17, respectively.

Cancel the additional claim 25 in the amendment filed July 21, 1924, referred to in the mark to the last paragraph of the last office action.

Renumber claims [illegible] 27, 28, 29, 30 and 31 as 18, 19, 20, 21, and 22, respectively.

Add the following claims:-

23. In a washing machine comprising driving power means, a tub for containing a cleansing substance and materials to be cleansed, an impeller alternately rotated in the tub by said power means, the impeller having a substantially imperforate base and a projection extending from that surface of the base facing the material to be cleansed, said projection being of sufficient depth to cause during the alternate rotation of the impeller a violent circulatory swirling of the cleansing without material contact with rubbing

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surfaces, the material to be cleansed turning over and over during the cleansing action.

1935 C. In a washing machine a tub having sides and a bottom, a driving shaft extending into the tub through the bottom, an agitator located adjacent said bottom and fixed to oscillate with said shaft, power means for imparting to said shaft and agitator a rotational oscillatory movement, one or more blades extending upwardly from the upper face of said agitator, said blade or blades being of greatest height adjacent the marginal edge of said agitator and decreasing in height toward the center of the agitator and merging adjacent said center in an elevated portion of the agitator, the rotary oscillation of the agitator causing the blade or blades to force the liquid and material being washed outwardly in a lateral direction, then upwardly along the side of the tub, then laterally of the tub and back again toward the agitator, this cycle being continuously repeated, with a movement of the tub contents also first in one circumferential direction around the tub and then to the other.

1935 D. In a washing machine, a tub having side walls and a bottom, a driving shaft extending through said bottom into the tub, an agitator fixed to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular base having an upstanding central portion, blades extending upwardly from the upper face of said base, the blades being of greatest height adjacent the marginal edge of the base, decreasing in height toward the center and merging into said upstanding central portion, the union between the agitator and the shaft permitting power-

al of the former from the latter by an upward movement, the oscillation of the agitator causing the blades to set up violent movement of the fluid and tub contents outwardly away from the agitator, upwardly, inwardly and then back toward the agitator, there also being superposed on this circulatory movement a movement of the fluid and tub contents first in one direction circumferentially of the tub and then in the other, so that the articles being washed will be thoroughly cleansed without any material rubbing of the blades thereagainst.

In a washing machine, a tub, a driving shaft extending into the tub, an agitator secured to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular body portion having blades extending therefrom on the face presented to the material being washed, the blades adjacent the marginal edge of the body portion being of a substantial dimension in a direction at right angles to the body portion, said body portion being free of any holes or openings of substantial dimensions, said blades and adjacent portions of the body portion of the agitator when the agitator is oscillated throwing the fluid in the tub, and material being washed, violently outwardly from the edge of the agitator whereby it will flow in circulatory paths away from the agitator, along the sides of the tub, then inwardly and back toward the agitator, this cycle being continuously repeated.

I³ cl. 21

REMARKS

Claims 1, 2 and 3 have been rewritten to present the same in better form of language without changing the scope of the claims as allowed. The Examiner will readily

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note by comparison of the claims that this is true, and that new claims 1, 2 and 3 are clearly allowable for the same reason as the three claims which have been allowed.

New claims 4, 5, 6 and 7 are introduced as the result of an understanding reached with the Examiner during a personal interview. As pointed out at that time, applicant is the first to introduce a washing machine in which the agitation of the cleansing liquid is sufficiently violent and at the same time adequately controlled as to effect a suspension of the articles being cleaned in the said water, while the water is forced violently therethrough. All of this is accomplished while the materials being washed are substantially out of rubbing contact with the mechanical parts of the machine. The art of record fails absolutely to disclose the motor-driven impeller which operates in such a manner as to violently force the water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in the opposed direction. It was understood at the interview that these claims would probably be allowed.

The amendment to former claim 7 (Original 13) is to correct an obvious error in that the article "a" should precede instead of follow the word "depressed". This change is merely made in the interest of correctness.

Former claims 14, 15 and 19 to 26, have been cancelled.

New claims 23 to 26, are added in order to present applicant's invention from a slightly different angle. These claims clearly bring out the structure for producing and the resultant function of the production in the tub of a violent circulatory swirling of the cleans-

ing substance and material in the tub to effect thorough cleansing without substantial contact with rubbing surfaces, the material to be cleansed turning over and over during the cleansing action.

It is believed the Examiner will readily agree that these claims are allowable for reasons supporting the allowance of claims heretofore presented in a slightly different way.

It is believed this application is in condition for allowance, and the passing of the same to issue at an early date is respectfully requested.

Respectfully submitted.

Wallace R. Lane

June 18 1908.

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PATENT OFFICE JUN 17 1926 N.Y.

UNITED STATES PATENT OFFICE

In re Application of
HOWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 85, Room 315.

WASHING MACHINES

JUN. 16 1926

SUPPLEMENTAL OATH UNDER RULE 48

STATE OF Iowa
County of Jasper } ss

HOWARD F. SNYDER being duly sworn deposes and says that he is the applicant named above; that the subject-matter of all amendments filed heretofore in this application or concurrently herewith was part of his invention, was invented before he filed his original application above identified; was not known or used before his invention, was not patented or described in a printed publication in any country more than two years before his application; was not patented in any foreign country on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application; was not in public use or on sale in this country for more than two years before the date of his application and has not been abandoned.

Howard F. Snyder

Subscribed and sworn to before me this 9th day of June, 1926.

Notary Public.
My Commission expires July 4th, 1927

1182

UNITED STATES PATENT OFFICE

In re Application of
HOWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 25, Room 315.

WASHING MACHINE

JUN 16 1928

AFFIDAVIT UNDER RULE 75

STATE OF Iowa
County of Jasper } ss

HOWARD F. SNYDER being duly sworn deposes and says that he is the inventor of the invention disclosed in the above identified application; that prior to February 23, 1922 (the filing date of Kirschey patent No. 1,464,382) a drawing of the liquid impeller or agitator and lower portion of the tub was made under his direction at Newton, Iowa, in the plant of The Maytag Company, the assignee of this application, which liquid impeller was circular in plan view with upstanding projections, vanes or ribs on that face presented toward the clothes being washed, and so constructed and arranged that when given an oscillatory rotation by a suitable shaft operated by a motor, or the like, the water in the tub together with the clothing being washed would be given a violent swirling gyratory action for thoroughly cleansing the clothing without material rubbing action; and that the attached blueprint (marked Exhibit A) was made from the original tracing made as stated above prior to February 23, 1922; that prior to February 23, 1922 a machine was actually constructed embodying the liquid impeller or agitator of said blueprint Exhibit A, and operated at the said Maytag Company plant, with water and clothing within the tub, and functioned successfully in the manner described above and set forth in the above identified application; that he does not know and does not believe

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that the invention has been in public use or on sale in this country, or patented or described in a printed publication in this or any foreign country for more than two years prior to his application, and that he has never abandoned the invention.

Howard F Snyder

Subscribed and sworn to before me this 9th day of June, 1926.

Eugene M Heathcock
Notary Public.
My Commission Expires July 4th. 1927

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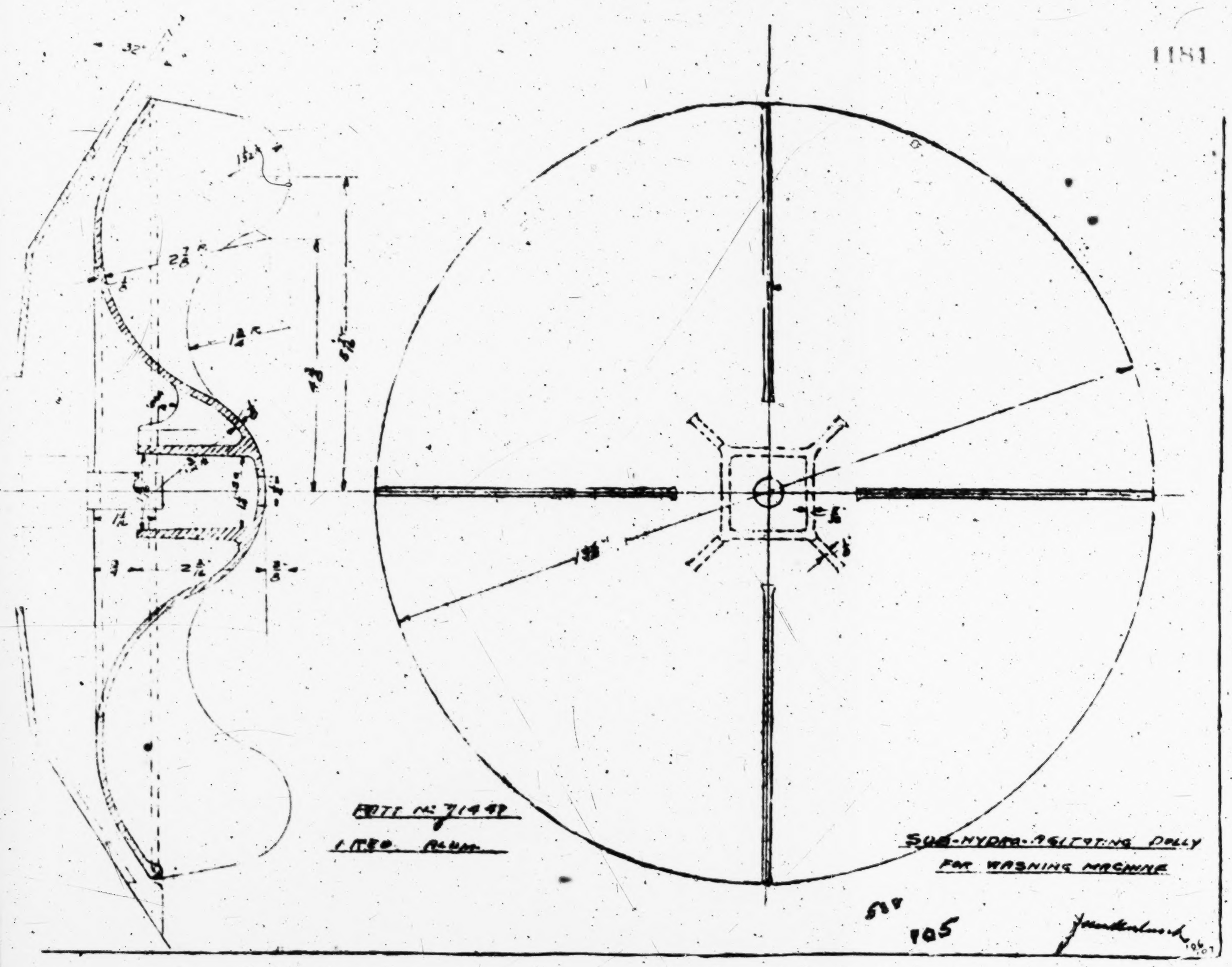
32°
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FOTT Nr 71492
LITEO ALUM.
SUB-HYDRA-SPUTTING DOLLY
FOR WASHING MACHINE
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PATENT OFFICE
JUN 17 1926
DIVISION XXV.

1185

IN THE UNITED STATES PATENT OFFICE

In re Application of
HOWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 25, Room 315.

WASHING MACHINE.

The Commissioner of Patents,

Present,

Sir:-

By the amendment filed June 15, 1926, former claims 19 to 25, both inclusive, were through inadvertence directed to be cancelled. The Examiner is requested to disregard the instructions to cancel the said claims and to retain them in the case as they now are; and to consecutively renumber all the claims in the case to conform to the cancellation of such other claims as were directed by said amendment to be cancelled.

Very respectfully,

Wallace R. Lane

Attorney.

June 16, 1926.

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PATENT OFFICE
JUL 21 1926
DIVISION XIV.

UNITED STATES PATENT OFFICE

In the Application of
HOWARD F. SMITH,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 86, Room 315.

WASHING MACHINES

AMENDMENT

Hon. Commissioner of Patents,
Washington, D.C.

Sir:-

Applicant amends as follows:-

Claim 6, line 4, after "said" insert:- flange or; same claim, line 9, change "thin material" to:- other materials.

Please add the following claim:-

Per K.

37 27. A washing machine comprising in combination a container, a rotary-reciprocatory impeller near the bottom of the container, and impeller-driving means extending through the bottom of the container, said impeller having means operable when it is reciprocated by said driving means to force water in the container upwardly in one gyratory direction, whereby the materials being washed will be suspended by the water and forced in one direction and then another and thoroughly cleansed while thus suspended.

Insert 27

Add 27

REMARKS.

Claim 6 has been amended to correct typographical

errors and new claim 27 is drawn to the subject matter which the Examiner has already indicated as being allowable.

There appears to be some confusion in the numbering of the claims and the Examiner is therefore requested to consecutively renumber all of the claims now standing.

Respectfully submitted,

Wallace R. Lane

July 20, 1926.

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Div. 25 Room 314 Thom-H Paper No. 16.

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

Please find below a communication from the EXAMINER in charge of this application.

Thomas E. Robertson
Commissioner of Patents.

July 23, 1926.

Applicant: Howard F. Snyder

Ser. No. 568158
Filed June 14, 1922.
For Washing machines.

Wallace R. Lane,
Marquette Building,
Chicago, Illinois.

MAILED

JUL 28 1926

In response to amendment filed June 15, 1926:

The following Claim is suggested under Rule 96 which applicant is required to file within 20 days from date otherwise he will be held to have disclaimed the subject matter thereof or any matter not patentably different therefrom.

A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle, comprising a lower disk-like portion having a stem rising therefrom and merging into said disk-like portion at its lower end and circumferentially spaced ribs carried by said dolly and extending radially of said disk-like member.

Claims 2,3,6,35 and 36 are rejected as not warranted by the original disclosure since no mention is made of the use of only one blade. Of these claims 2, 3, and 35 do not appear to be patentably different from applicant's copending application which is involved in interference. Claims 6 and 36 are further rejected as alternative by the inclusion of "one or more."

It is apparent that applicant is attempting to cover a species which has not been disclosed in this application as the specification merely discloses a plurality of blades and does not describe or suggest that one blade might be used.

Claim 11, original 13, line 7, change "liquid impeller" back to "gyratory." The change appears to have been made in error.

The remaining Claims 1,4,5, 7 to 32, inclusive, 35 and 36 appear to be allowable.

J. L. Stallworth
Examiner.

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UNITED STATES PATENT OFFICE

In re Application of
EDWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 25, Room 314.

WASHING MACHINES

POWER TO INSPECT

July 27, 1926.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:-

Please permit Miss A. M. Parkins, of Washington Loan & Trust Building, Washington, D. C. to have access to the file of the above identified application for the purpose of making copies of some of the papers therein.

Respectfully,

Wallace R. Lane

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UNITED STATES PATENT OFFICE

PATENT OFFICE AUG 10 1926 DIVISION XXV.

In re Application of
HOWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 25, Room 314.

WASHING MACHINES

AMENDMENT

August , 1926.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:-

Responsive to Office Action of July 23, 1926, applicant amends as follows:

Claim 11, original 13, line 7, change "liquid impeller" to - gyratory.

Add the following claim:

A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle, comprising a lower disk-like portion having a stem rising therefrom and merging into said disk-like portion at its lower end and circumferentially spaced ribs carried by said dolly and extending radially of said disk-like member.

REMARKS

The claim suggested under Rule 96 by the Examiner is presented herewith, applicant reserving the right to present any options appearing proper after inspection of the other party's complete disclosure.

The objection as to claims 2, 3, 6, 33 and 34

is not understood. As is well settled in Patent Office practice, breadth of a claim is no ground for rejection. If applicant's impeller is shown in the drawings with four blades, it clearly has one blade, as the greater includes the lesser. When this application was filed applicant had in mind that he did not wish to be limited to any particular number of blades, but might use any number, one or more, as is clearly seen in lines 12 and 13, of page 8 of the specification, where is stated - "In the embodiment shown there are four of these blades, but any number may be used as desired." This clearly furnishes foundation for such recitations as "a projection" and "one or more blades", etc. in the claims. Even without such statement it is believed to be obvious that applicant should be permitted to claim his invention broadly enough to afford protection against others using only a single blade where such single blade is so constructed and used as to accomplish the purpose and spirit of applicant's invention.

In the absence of a reference anticipating applicant's structure applicant should be entitled to word his claims as broadly as possible. It is believed upon reconsideration the Examiner will see the correctness of applicant's position and withdraw this objection.

Respectfully submitted,

Wallace R. Lane

LRL/O

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DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

Please find below a communication from the EXAMINER in charge of this application

Sept. 8, 1926.

Commissioner of Patents.

Applicant Howard F. Snyder

Ser. No. 566,152
Filed June 14, 1922
For Washing Machines

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

MAILED

SEP 8 1926

In accordance with the provisions of Order No. 2028, dated March 12, 1917, which reads in part as follows:

> Obvious informalities in the application may be corrected by the examiner, but said correction must be in the form of an amendment, approved by the Principal Examiner in writing, placed in the file, and made a part of the record. The changes specified in the amendment will be entered by the clerk in the regular way.

the changes, hereinafter specified, are made by the examiner in the application above identified.

Should these changes not be satisfactory to the applicant, appropriate amendment may be prepared under the provisions of Rule 78, provided the specification has not been printed.

The application has been amended as follows:

Claim 21, line 6, change "their" to "the and change "to" to of.

Claim 22, line 7, change "to" to of.

T. F. Mitchell
Acting Examiner.

ENT.

B 2-070

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INTERFERENCE.

Interference No. 54316 Paper No. 19

Name, Howard E. Saylor

Serial No. 568,158

Title, Washing Machines

Filed, June 14, 1922

Interference with Cornelius C. Durnh

DECISIONS OF

as to counts 2, 4, 10, 11, 18, 21, 22, 24, 25, 27, 28, 31,

Primary Examiner, Interference dissolved Dated, May 26 1927

Ex'r of Interference, Favorable Dated, Oct 12/28.

Board Aff'd as to Cls. 1 & 14 Rev'd as to Cls. 12 & 13 Dated, Dec. 31-1929

Commissioner Reversed as to Claims 12 & 13. Dated, -

Aff'd " " " 14.

REMARKS:

This sheet to be placed in each application or patent involved in interference in addition to the interference letters by Primary Examiner.

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Dr. 38 Room 314 MET:MJ

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE

Paper No. 20

Please find below a communication from the EXAMINER in charge of this application

Thomas E. Robertson
Commissioner of Patents

Applicant: Howard F. Snyder

Ser. No. 566,158
Filed June 14, 1922
For Washing Machine

Wallace R. Lane,
Marquette Bldg.
Chicago, Ill.

PATENT OFFICE
OCT 1 - 1926

The case, above referred to, [illegible] to the Examiner of Interferences because it is adjudged to interfere with others hereafter specified. The question of priority will be determined in conformity with the Rules. The interference will be identified as No. 54316 On or before NOV 16 1926 the statement demanded by rule 110 must be sealed up and filed with the subject of invention, and name of party filing it, indorsed on the envelope. The subject-matter involved in the interference is

1. The method of cleansing fabrics in a tub consisting in agitating a washing fluid in such a way as to create positively driven violently flowing currents moving away from and back to the plane of the source of agitation, and also around the tub in one direction in a plane approximately parallel with the plane of agitation and then causing it to move away from and back to the plane of the source of agitation and in a reverse direction in a plane parallel with the plane of agitation so as to bodily and forcibly cause the fabrics in the tub to travel in substantially the same paths as the fluid, whereby thorough cleansing of the fabrics is effected without material contact with rubbing surfaces.

not pat Jan 24

2. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container, motor-driven means extending through the bottom of the container by which the impeller is so driven as to violently force water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be suspended by the water and forced in one direction and then another and thoroughly cleansed while thus suspended.

3. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller, mounted through the bottom of the container, so constructed and arranged that when water and materials to be cleaned are placed in the container and the impeller is reciprocated, the water will first be violently forced laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed gyratory direction, so

that the materials being cleaned will be suspended by the movement of the water, and the water forced through and around the materials to thoroughly cleanse them, while said materials are substantially out of rubbing contact with the mechanical parts of the machine, and motor-driven means for rapidly driving the impeller.

4. A washing machine comprising in combination a container, a rotary reciprocating clothes impeller in said container, the said impeller having an axially extended working surface which is sufficient in extent relative to the depth of the container to positively and vigorously whip the washing fluid laterally and vertically in an opposed direction, whereby the washing fluid is driven violently through the clothes, and motor-driven means for imparting rapid rotary reciprocative movements to said impeller.

5. In a washing machine the combination of a tub for containing a cleansing substance and the materials to be cleansed, said tub having an outwardly and upwardly inclined portion, an impeller cooperating with the said inclined portion of the tub to force said cleansing substance and materials to be cleansed outwardly in a direction substantially parallel with said inclined portion, and power means for oscillating said impeller.

6. In a washing machine the combination of a tub adapted to contain wash water and goods to be washed, said tub having a flared portion, a liquid impeller in said tub having a depressed portion, said liquid impeller co-operating with said flared portion to swirl said wash water and goods with a substantially gyratory movement, and power means to alternately rotate said liquid impeller.

7. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a liquid impeller, mechanism driven by said power means for oscillating said liquid impeller, said liquid impeller having flanges and a radially depressed portion operative to upwardly swirl said cleansing substance and material.

8. In a washing machine comprising a driving power means, the combination of a tub for containing washing and washable materials, a liquid impeller, means operable to alternately rotate said liquid impeller, said liquid impeller being provided with an upstanding flange and a depressed portion on each side of said flange and operative to swirl said materials with a substantially gyratory movement.

9. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a liquid impeller, mechanism driven by said power means for alternately rotating said liquid impeller, said liquid impeller having upwardly and radially

extending flanges and a radially depressed surface operative to upwardly swirl said cleansing substance and materials.

10. In a washing machine comprising driving power means, the combination of a liquid impeller operated by said means, a tub for containing water and goods to be washed, said tub being relatively shallow with respect to its horizontal dimension, said liquid impeller operable to maintain said goods in suspension above the impeller in the water while being swirled about said tub with said water.

11. In a washing machine comprising driving power means, the combination of a liquid impeller operated by said means, a tub for containing wash water and goods to be washed, said tub having a tapered lower portion, said liquid impeller having a flared portion, said tapered and flared portions co-operating to swirl said water and goods with a substantially gyratory movement in said tub.

12. In a washing machine comprising driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a centrally raised portion and radially depressed portion, and operable to swirl said materials with a substantially gyratory movement.

13. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a centrally raised portion, a radially depressed portion and flanges extending radially from said centrally raised portion said liquid impeller operable to swirl said materials with a substantially gyratory movement in said tub.

14. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a central conoidal portion, an inclined peripheral portion and an intermediate trough portion, said liquid impeller operating to swirl said materials with a substantially gyratory movement in said tub.

15. In a washing machine comprising a driving power means, a tub, an alternating rotary liquid impeller having a plate formed with an annular depression, a raised central portion and upstanding flanges in said depression, said plate, depression, central portion and flanges operating on the contents of the tub to give the contents a gyratory movement.

16. In a washing machine comprising driving power means, a tub, a liquid impeller therein and operated by said means, the liquid impeller and tub having cooperating flared portions for upwardly swirling the contents of the tub.

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17. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a substantially cylindrical stem rising from and merging into the central portion thereof and terminating in an upper rounded end, said stem having spaced ribs extending vertically along its sides upwardly tapered throughout the length of said stem and extending outwardly across the dish-shaped member.

18. A dolly for a washing machine comprising a cup-shaped disk with a frusto-conical portion rising from its center having a substantially cylindrical stem projecting centrally thereabove and terminating in a rounded top, said stem having radial ribs projecting therefrom and extending along the sides thereof, said ribs being tapered throughout the length of said stem and extending in lobe-shaped form across the surface of said disk.

19. An agitating member for a washing machine comprising a cup-shaped disk having a frusto-conical portion rising from the center thereof, the vertical elements of which are concave so that the surface of said portion merges into the surface of said disk, and a round upwardly tapering portion projecting above said frusto-conical portion and terminating in a rounded surface, and narrow radial wings projecting from said latter portion and extending along the sides thereof and across the surface of said disk and having rounded outer edges merging into the concave surface of said disk.

20. A dolly for a washing machine comprising an annular trough, a stem rising centrally from said trough and having a plurality of circumferentially spaced radial wings projecting therefrom and extending along its sides and across the surface of said trough the top surface of said wings above said trough curving downwardly and inwardly.

21. A dolly for a washing machine comprising a dish-shaped member and a rounded stem rising from and merging into the central portion thereof and terminating in an upper rounded end, spaced ribs extending vertically along said stem and merging into the upper rounded end thereof and extending across the dish-shaped member at the lower ends in lobe-shaped form whereby the upper surfaces thereof above said member are concave.

22. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a circular disk-like member having a stem rising from and merging into its central portion, and ribs extending vertically from the upper end of said stem downwardly therealong and across the surface of said disk-like member.

23. A rotatable dolly for a washing machine adapted to be disposed in a liquid containing receptacle comprising a dish-shaped member having a central upstanding tapered stem with a rounded upper end, ribs extending across said dish and upwardly along the side of said stem and

having rounded upper edges merging into the rounded surface of said stem.

not pat

24. A rub for a washing machine, comprising a bottom portion, side portions, and an upwardly inclined portion between the bottom and side portions and means co-operating with the inclined portion for causing the contents of the rub to travel upwardly thereon.

not pat

25. In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator comprising of a substantially disk-like, imperforate body, and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator.

26. In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator consisting of a substantially disk-like imperforate body and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator, leaving the central portion of said body free of water impelling projections.

27. In a washing machine, the combination of a tub, an actuating shaft upstanding through the bottom of said tub, a block on said shaft above the tub bottom and an agitator having a centrally disposed upstanding dome and liquid impelling means radiating therefrom, said dome being provided at its underside with a socket adapted to fit over said block.

not pat

28. In a washing machine, the combination of a tub, an actuating shaft upstanding through the bottom of said tub, a block secured to said shaft above the tub bottom and an agitator having a centrally disposed upstanding dome and liquid impelling means radiating therefrom, said dome being provided with a socket to receive said block for forming a driving connection between said shaft and agitator.

29. In a washing machine, a tub having side walls and a bottom, a driving shaft extending through said bottom into the tub, an agitator fixed to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular base having an upstanding central portion, blades extending upwardly from the upper face of said base, the blades being of greatest height adjacent the marginal edge of the base, decreasing in height toward the center and merging into said upstanding central portion, the union between the agitator and the shaft permitting removal of the former from the latter by an upward movement, the oscillation of the agitator causing the blades to set up a violent movement of the fluid and tub contents outwardly away from the agitator, upwardly, inwardly, and then back toward the agitator, these also being superposed on this circulatory movement a movement of the fluid and tub contents first in one direction circumferentially of the tub and

then in the other, so that the articles being washed will be thoroughly cleansed without any material rubbing of the blades thereagainst.

30. In a washing machine, a tub, a driving shaft extending into the tub, an agitator secured to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular body portion having blades extending therefrom on the face presented to the material being washed, the blades adjacent the marginal edge of the body portion being of a substantial dimension in a direction at right angles of the body portion, said body portion being free of any holes or openings of substantial dimensions, said blades and adjacent portions of the body portion of the agitator when the agitator is oscillated throwing the fluid in the tub, and material being washed, violently outwardly from the edge of the agitator whereby it will flow in circulatory paths away from the agitator, along the sides of the tub, then inwardly and back to the agitator, this cycle being continuously repeated.

31. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle, comprising a lower disk-like portion having a stem rising therefrom and merging into said disk-like portion at its lower end and circumferentially spaced ribs carried by said dolly and extending radially of said disk-like member.

The interference involves your application above identified and

an application of Cornelius C. Unruh of Freeman, South Dakota, for Dolly for Washing Machines, whose attorneys are Williamson, Reif & Williamson, 925 Metropolitan Life Building, Minneapolis, Minnesota.

The relation of the counts of the interference to the claims of the respective parties is as follows:

Counts	Snyder	Unruh
1	1	15
2	4	16
3	5	17
4	7	18
5	8	19
6	9	20
7	10	21
8	11	22
9	12	23
10	13	24
11	14	25
12	15	26
13	16	27
14	17	28
15	19	29
16	20	30

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Ser. No. 566,158

Con't

Counts	Snyder	Unamb
11	21	1
12	22	3
13	23	5
14	24	6
15	25	7
16	26	8
17	27	9
	28	11
	29	12
	30	13
	31	14
	32	15
	33	16
	34	17
	35	18
	36	19
	38	14

Counts compared

J. F. Mitchell

Acting Examiner, Div. 25.

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21 2

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UNITED STATES PATENT OFFICE

In re Application of
EDWARD F. SNYDER,
Ser. No. 588,158,
Filed June 14, 1922,
Div. 35, Room 314.

WASHING MACHINES

AMENDMENT

June 11, 1927.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:-

Applicant amends as follows:

Please cancel claims 21, 22, 25, 26 and 32.

Rewrite claims 4, 7, 13, 14, 20, 29, 31, 38 and 39 as follows:

1 4. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container having upstanding flanges thereon so arranged as to violently force water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be substantially suspended by the water and thoroughly cleaned while thus suspended, and motor-driven means extending through the bottom of the container to rotatably reciprocate the impeller. Add F4 cl

7 7. A washing machine comprising in combination a container, a rotary reciprocating impeller in said container

having upstanding flanges thereon of substantial area and an axially extended working surface so arranged as to positively and vigorously force the washing fluid laterally and vertically in opposed directions whereby the washing fluid is driven violently through the clothes while they are out of substantial contact with the impeller, and motor-driven means for imparting rapid rotary reciprocative movements to said impeller

13 41. In a washing machine comprising in combination a tub for containing water and goods to be washed, a rotary reciprocatory impeller in the tub having flange-like means extending therefrom of substantial height in a direction at right angles to the body of said impeller and elongated to provide faces of considerable area for action against the water when the impeller is reciprocated, whereby the water is forced violently laterally from the impeller in gyratory paths so that the goods to be washed will be suspended in the circulating water and out of substantial contact with the impeller, and motor-driven means for rotatably reciprocating the impeller.

14 42. In a washing machine comprising in combination a tub for containing wash water and goods to be washed, and having an inclined lower portion, a rotary oscillatory impeller in said tub having horizontally elongated flanges of such length and height and so constructed and arranged as to present to the water working faces of substantial area whereby the impeller when oscillated will vigorously drive the water and goods laterally and vertically in circulatory paths and force the water through and around the goods and cleanse them while out of substantial contact with the impeller, and motor-driven means for oscillating the impeller

15 43. In a washing machine comprising a tub for containing wash water and goods to be washed and having an inclined portion, an oscillating liquid impeller in said tub having impelling flanges thereon of substantial facial area so constructed

and arranged so as forcibly swirl the water and goods in circulatory paths, the impeller and inclined portion cooperating to throw the water and goods laterally, upwardly, and inwardly, a shaft secured to the impeller, and motor-driven means to oscillate the impeller.

19. In a washing machine, a tub for containing warm water and goods to be washed, an oscillatory dish-like agitator in said tub near the bottom thereof and having a plurality of upstanding water-impelling projections extending from one face thereof, said projections being of substantial height contiguous to the periphery of the agitator and decreasing in height toward the center whereby side faces of substantial area are provided, and while the agitator is oscillated the water and goods will be vigorously forced laterally upwardly in gyratory paths to violently force the water through, between and around the goods and thoroughly cleanse them while they are sustained in the water free from any substantial contact with rubbing surfaces, and motor-driven means for oscillating the agitator.

20. In a washing machine a tub for containing warm water and goods to be washed, a rotary oscillatory impelling agitator near the bottom of the tub and having a centrally disposed upstanding dome and upstanding impelling means of substantial height and length to provide impelling faces of substantial area so arranged that when the agitator is oscillated said faces in conjunction with the rest of the agitator will cause the contents of the tub to move outwardly and upwardly in gyratory paths and wash the sustained goods without material rubbing action, a drive shaft extending through the bottom of the tub, a block on said shaft, the dome being provided with a socket to removably receive the block to drive the agitator, and motor-driven means to oscillate the agitator.

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46. In a washing machine, a tub for receiving wash water and goods to be washed, a rotary oscillatory agitator in the tub comprising a lower disk-like portion having a stem rising therefrom with its top portion well below the top of the tub and merging into said disk-like portion at its lower end, said disk-like portion having upstanding circumferentially spaced radial flanges of substantial height and facial area, said flanges being so arranged on the agitator as to throw the water and goods laterally, upwardly, inwardly and downwardly in gyratory paths and force the water through, between and around the goods to thoroughly cleanse them while they are circulated out of substantially rubbing contact, a shaft extending through the bottom of the tub and into said stem, and motor-driven means for oscillating the shaft and agitator.

47. In a washing machine, a tub having a substantially uninterrupted inner surface and adapted to contain cleansing liquid and materials to be washed, the bottom of the tub merging smoothly into the sides, an oscillatory liquid impeller mounted adjacent the bottom of the tub, having on its upper surface upstanding wing-like means of substantial height and length so constructed and arranged that when the impeller is given a rapid rotary oscillatory movement the cleansing liquid and materials to be washed will be violently forced laterally from the impeller upwardly along the side of the tub, then away from the side and back toward the impeller, this cycle being continuously repeated to force the cleansing liquid through and around the materials to be washed to thoroughly cleanse them while they are substantially out of rubbing contact with the impeller, and motor-driven means for imparting to said impeller a rapid rotary oscillatory movement.

Add Cl. 12

REMARKS

Claims 21, 22, 25 and 26 are being cancelled in view of the Law Examiner's decision that they do not read on Snyder's disclosure.

New claims 39, 40, 41, 42, 43, 44, 45, 46 and 47 are claims 4, 7, 13, 14, 30 29, 31, 36 and 28, respectively, (which formed counts 3, 4, 10, 11, 18, 25, 27, 31 and 24, respectively, of the issue of the Unruh -vs- Snyder interference No. 84,316) rewritten to overcome the Law Examiner's objections to said counts in his decision of May 26, 1927. These claims are clearly patentable for the following reasons:

Claim 39

Claim 39 is rewritten count 3, against which count the Law Examiner held the most pertinent patents of the many cited in Unruh's motion to dissolve to be Coffield, et al, and Doughty, et al. Doughty, et al has been sworn back of by an affidavit under Rule 75 being filed concurrently herewith under permission of the Law Examiner. Coffield, et al, merely shows an old fashioned peg-type-dolly machine which could not possibly accomplish Snyder's results. The Law Examiner's criticism of count 3 was that it depended too much on the way in which the agitator was driven. This criticism has been overcome in claim 39, which recites differences in positive structure over Coffield, et al. For example, this claim recites the impeller as having "upstanding flanges thereon so arranged as to violently force water in the container laterally and upwardly in one gyratory direction, and then laterally and upwardly in an opposed direction, whereby the materials being washed will be substantially suspended by the water and thoroughly cleaned while thus suspended." This claim clearly differentiates ove. Coffield both in structure and operation and is allowable.

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Claim 40

This claim is count 4 of the issue of said interference rewritten to overcome the Law Examiner's objections thereto. The references cited by him against count 4 were Cofficld, et al, and Doughty, et al. The latter, as pointed out above has been sworn back of by an affidavit under Rule 75.

Claim 40 patentably differentiates over Cofficld, et al, by bringing out that the impeller has "upstanding flanges thereon of substantial area and an axially extended working surface so arranged as to positively and vigorously force the washing fluid laterally and vertically in opposed directions." This claim is now allowable over each and all of the references.

Claim 41

This claim is count 10 of said interference rewritten to obviate the Law Examiner's objection thereto. The references cited by him against count 10 were Hanna (Brit.) and Doughty, et al. Doughty, et al, as pointed out above is no longer a reference.

In Hanna the agitator rotates continuously in one direction and hence is incapable of accomplishing Snyder's results. This claim in addition to bringing out Snyder's differences in action upon the water, also recites that Snyder's impeller is a rotary reciprocatory impeller, and recites "motor-driven means for rotatably reciprocating the impeller." This claim is accordingly clearly allowable over Hanna (Brit.) and all of the other references.

Claim 42

Claim 42 is count 11 of said interference rewritten to overcome the Law Examiner's objections thereto. The reference held against count 11 was Nielsen. It is to be noted that

11 did not bring out that the impeller oscillates, or marks to oscillate the same. The propeller of Nielsen rotates continuously in one direction and is for an entirely different purpose. Claim 42 recites 'a rotary oscillatory impeller' and 'motor-driven means for oscillating the impeller,' in addition to the elongated flanges on the impeller and the very different action set up in the water. This claim is now clearly allowable over Nielsen and all of the other references, of which the Law Examiner deemed Nielsen the closest.

Claim 43

Claim 43 is count 18 of said interference rewritten to avoid the Law Examiner's criticisms thereagainst. The references held against count 18 by the Law Examiner were Nielsen and Wolcott. As pointed out above the propeller of Nielsen rotates continuously in one direction. The 'oscillating' liquid impeller is brought out in claim 43 as well as the 'motor-driven means to oscillate the impeller.' The same objection applies to Wolcott whose washer operates only in one direction. Claim 43 also brings out that the impeller has 'impelling flanges thereon of substantial facial area so constructed and arranged as to forcibly swirl the water and goods in circulatory paths, the impeller and inclined portion cooperating to throw the water and goods laterally, upwardly and inwardly.' The action in each of Nielsen and Wolcott is entirely different. Nielsen is merely a mixer and Wolcott washes dishes or other articles merely by splashing the water thereover. Claim 43 is clearly allowable.

Claim 44

Claim 44 is count 25 of said interference rewritten to overcome the objections held thereagainst. Mears 380,446

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was considered by the Law Examiner to be the nearest reference to count 25 of the multitude of references cited by Unruh in his motion to dissolve. In Neare the agitator is normally in the upper portion of the tub and rests upon and bears down upon the clothes to clean them by a rubbing action. In fact Neare calls his agitator a rubber. It is obvious that it would be impossible to accomplish Snyder's results in the Neare Machine.

Claim 44 differentiates from Neare by reciting that the agitator is near the bottom of the tub and has upstanding projections of substantial height contiguous to the periphery of the agitator and decreasing in height toward the center whereby side faces of substantial area are provided, and while the agitator is oscillated the water and goods will be vigorously forced laterally upwardly in gyratory paths to violently force the water through, between and around the goods and thoroughly cleanse them while they are sustained in the water free from any substantial contact with rubbing surfaces. Clearly no such action is disclosed in the Neare patent.

Claim 46

Claim 46 is count 27 of said interference rewritten to overcome the objections thereto. The references considered by the Law Examiner as coming the nearest to count 27 were Doughty, et al, Pegg (Brit.) and Voss. Doughty, et al, is no longer a reference against Snyder. Pegg, in addition to not being capable of accomplishing Snyder's operation and results, rotates continuously in one direction. Claim 46 brings out that the agitator is a 'rotary oscillatory impelling agitator' and that Snyder's machine has 'motor-driven means to oscillate the agitator,' as well as the distinct action recited that is impossible in such a dough mixer as shown by Pegg.

Voss shows nothing more than a machine having the

old fashioned peg-type-dolly. The action in Snyder's machine is so different from the machine shown in Voss' patent as to barely require comment. As distinguished from Voss' pegs or pins claim 46 recites the agitator as having "upstanding impelling means of substantial height and length to provide impelling faces of substantial area so arranged that when the agitator is oscillated said faces in conjunction with the rest of the agitator will cause the contents of the tub to move outwardly and upwardly in gyratory paths." This is clearly not shown or suggested in either Voss or Pegg. This claim is allowable.

Claim 46.

Claim 46 is count 31 of said interference rewritten to remove the objections thereto. The references held to be the nearest to count 31 were Newton (Brit.) and Doughty, et al, the latter of which has been sworn back of. The Newton agitator rotates continuously in one direction and for this and other reasons could not accomplish Snyder's results. Claim 46 recites "a rotary oscillatory agitator" and "motor-driven means for oscillating the shaft and agitator." This, as well as the distinctly different action on the water recited in this claim, Newton does not have. Claim 46 is clearly patentable.

Claim 47.

Claim 47 is count 24 of said interference rewritten to patentably differentiate from the references held thereagainst and obviate the Law Examiner's objections. The reference considered by the Law Examiner as being the nearest of those cited in Unruh's motion to dissolve was Wolcott. The machine shown in the Wolcott patent has a "dasher" 13 which rotates continuously in one direction. Claim 47 recites "an oscillatory liquid impeller" and "motor-driven means for

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imparting to said impeller a rapid rotary oscillatory movement. This clearly differentiates over Wolcott. Furthermore, in Wolcott the water is splashed or dashed upwardly onto the dishes or other articles placed in a wire basket. This claim further distinguishes from Wolcott by reciting the entirely different action set up in the tub, which would be impossible of accomplishment in the Wolcott machine. Claim 47 is patentable.

Each and all of the claims presented herewith are patentable over each and all of the references of record, or set up in the motion to dissolve.

Respectfully submitted,

Wallace R. Lane

LFW/G

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DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE

Copy sent Assignee

Thomas E. Robertson
Commissioner of Patents

Applicant: Howard P. Snyder

Ser. No. 868,158
Filed June 14, 1922
For washing Machines.

Wallace R. Lane,
Marquette Bldg.,
Chicago, Ill.

PATENT OFFICE
MAR 17 1928
FILED

64,316

In re Interference No. 64,316.
Unruh vs. Snyder.

The counts hereinafter specified have been added to the above noted interference, pursuant to the decision of the Law Examiner dated Jan. 26, 1928.

The subject matter of the added counts is:

18 Cl. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container having upstanding flanges thereon so arranged as to violently force water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be substantially suspended by the water and thoroughly cleaned while thus suspended, and motor driven means extending through the bottom of the container to rotatably reciprocate the impeller.

19 Cl. In a washing machine, a tub for containing wash water and goods to be washed, an oscillatory disk-like agitator in said tub near the bottom thereof and having a plurality of upstanding water-impelling projections extending from one face thereof, said projections being of substantial height contiguous to the periphery of the agitator and decreasing in height toward the center whereby side faces of substantial area are provided, and while the agitator is oscillated the water and goods will be vigorously forced laterally upwardly in gyratory paths to violently force the water through, between and around the goods and thoroughly cleanse them while they are sustained in the water free from any substantial contact with rubbing surfaces, and motor-driven means for oscillating the agitator.

20 Cl. In a washing machine, a tub having a substantially uninterrupted inner surface and adapted to contain cleansing liquid and materials to be washed, the bottom of the tub merging smoothly into the sides, an oscillatory liquid impeller mounted adjacent the bottom of the tub, having on its upper surface upstanding wing-like means of substantial height and length so constructed and arranged that when the impeller is given a rapid rotary oscillatory movement the cleansing liquid and materials to be washed will be violently forced laterally from the impeller then upwardly along the side of the tub, then away from the tub side and back toward the impeller, this cycle being continuously repeated to force the cleansing liquid through and

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around the materials to be washed to thoroughly cleanse them while they are substantially out of rubbing contact with the impeller, and motor-driven means for imparting to said impeller a rapid rotary oscillatory movement.

The relation of the added counts to the claims of the respective parties is as follows:

Counts	Unruh	Snyder
18	38	39
19	39	44
20	40	47

A statement such as is required by Rule 110, as to the added counts, must be sealed up and filed on or before APR 23 1928, with the subject matter of the invention and the name of the party filing it endorsed on the envelope.

jom

Examiner.

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INTERFERENCE

Interference No. _____ *Paper No.* 24

Name, Howard F. Snyder

Serial No. 549,188

Title, Washing Machines

Filed, June 14, 1922

Interference with Cornelius C. Unruh - Alpheus W. Altorfer.

DECISIONS OF

Law Examiner, _____ *Dated,* _____

Ex'r of Interferences, _____ *Dated,* _____

Board, _____ *Dated,* _____

Commissioner, _____ *Dated,* _____

REMARKS:

This should be placed in each application or patent involved in interference in addition to the interference letter by Primary Examiner.

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#54,346

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IN THE UNITED STATES PATENT OFFICE

In re Application of
Howard F. Snyder,
Serial No. 568,158,
Filed June 14, 1922,
Div. 26, Room 314.

WASHING MACHINE

AMENDMENT

Hon. Commissioner of Patents,
Present.

Sir:

Amendment is hereby made as follows:-

Page 1, line 9, (two occurrences) after "gyrator" insert ---or impeller---.

Page 1, line 15, after "kinds" change the comma (,) to a period (.).

Page 1, line 14, cancel "which" and substitute ---My invention---.

Page 2, line 2, cancel "in the least".

Page 2, line 9, cancel beginning with "In washing machines it has been" through and including "tearing or tangling of the clothes." in line 14.

Page 2, line 18, immediately before "gyrotator" (first occurrence) insert ---the---.

Page 2, line 20, cancel "as to" and substitute ---of---.

Page 2, line 23, before "inclined" insert ---a---; same line, cancel "side as"; line 24, singularize "portions".

Page 2, line 3, after "peddily" insert ---covered--- to restore this word as it appeared in the original specification.

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Page 3, line 6, cancel "outwardly" and insert ---upwardly--- to restore this word as it appeared in the original specification.

Page 3, line 9, after "tub," insert ---first in one direction and then in an opposite direction---.

Page 3, line 12, cancel "reach substantially every point" and substitute ---are driven about---.

Page 3, line 12, cancel "by" and substitute ---in---.

Page 3, line 14, after "tub" cancel the comma (,).

Page 3, line 15, cancel "also"; same line, cancel "and also"; same line, after "paths" cancel comma (,); same line, after "materials" insert a comma (,).

Page 3, line 17 after "mechanism" change the comma to a period; same line, cancel "which" and insert ---This mechanism---.

Page 3, line 19 immediately before "resilient" cancel "provide".

Page 3, line 20, cancel "yielding" and insert ---yieldable---.

Page 3, line 22, after "interference" insert ---of the operator---.

Page 4, line 12, after "agitation" insert a comma (,).

Page 5, line 8, after "of" (first occurrence) insert ---the removable plate at---.

Page 5, line 16, cancel "s".

Page 6, line 3, pluralize "pulley".

Page 6, line 4, cancel "In this way" and insert ---By this means---.

Page 6, line 8, cancel "for such a shaft".

Page 6, line 23, after "25" insert a comma (,).

Page 6, line 24, after "respectively" insert a comma (,).

Page 6, line 24, after "29" change the comma (,) to a period (.).

Page 6, line 25, cancel "the former of which" and insert ---Said housing 28---.

Page 6, line 26, cancel "forming" and insert ---includes---.

Page 7, line 1, after "16" change the comma (,) to a period (.).

Page 7, line 1, cancel commencing "and the latter" and ending "which" line 2 and insert --- The housing 29---.

Page 7, line 4, cancel "35" and insert ---35'---.

Page 7, line 10, cancel "have" and insert ---be---.

Page 7, line 13, after "by" insert ---a---.

Page 7, line 13, cancel "pins" and insert ---pin---.

Page 7, line 15, cancel commencing "are" and ending "they" line 16.

Page 7, line 18, after the comma (,) following "invention" insert ---and therefore,---.

Page 7, line 3 from the bottom, in the amendatory matter inserted by the amendment dated Chicago, July 19, 1924, line 2 of said amendatory insertion, cancel "dolly or", and change "agitator" to ---impeller---, and in line 2 of said amendatory matter after "gyrator" insert ---or impeller---. In line 7 of said amendatory matter cancel "with a cor-", and in line 8, cancel "responding rearrangement of surrounding inclined tub wall and", and substitute ---thereby bringing about---.

In the amendatory matter inserted at page 8, line 4, by the amendment dated Chicago, July 19, 1924, line 5 of the first page of said last mentioned amendatory matter cancel "upwards" and insert ---upwardly---, and in line 1, cancel "of sheet" and preferably aluminum" and before "and" insert ---or other suitable material---.

Page 2, of said amendatory matter (inserted at line 4, page 8), line 9, cancel "dished," and in line 10, cancel "across the central or trough-like portion".

Page 2 of said amendatory matter (inserted at line 4, page 8), line 14 of said page 2, change "half" to ---part---.

Page 2, of said amendatory matter (inserted at line 4, page 8), line 31, cancel "to" and substitute ---toward---, and in same line cancel "very".

Page 9, of the specification, line 13, cancel "the" (second occurrence).

Page 9, line 6, cancel "holding" and insert ---hold---.

Page 9, line 15, cancel "arm" and insert ---arms---.

Page 9, bottom line, change "Fig." to ---Figs.---.

Page 10, line 14, cancel "78" and substitute ---78---; line 17, cancel "or angularly oscillate, and hence" and substitute ---and through the medium of shaft 52 impart such movement to---.

Page 10, line 20, cancel "88" and substitute ---89---; line 24, cancel "92" and substitute ---52---; same line, singularize "bearings."

Page 11, line 3, cancel "99" and insert ---100---.

Page 11, line 13, cancel "hinged."

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Page 11, line 20, cancel "constructed to drew" and substitute ---into the upper portion of which---; same line, cancel "from" and substitute ---is drawn by---.

Page 11, line 21, cancel "and" (first occurrence) and substitute ---on---; same line, cancel "a discharge of the charge,".

Page 11, line 22, before "into" insert ---discharged---.

Page 11, line 24, before "direction" insert ---general---.

Page 12, line 2, after "oscillated" insert a comma (,) and cancel the following word "and" (first occurrence); same line, cancel "a mass of and pluralize ---material---.

Page 12, line 3, cancel "mass" and substitute ---liquid---; same line change "fluid" to ---liquid---.

Page 12, lines 4, 5 and 6, cancel beginning in line 4 with "movement, then an upward" to and including "well 48, then on" in line 6; line 6, before "upward" insert ---by---.

Page 12, line 7 cancel "in the".

Page 12, line 8, cancel "center of the tub"; same line, cancel "mass" and substitute ---liquid---.

Page 12, line 9, after "tub" insert ---first in one direction and then in an opposite direction---.

Page 12, line 10, pluralize "motion" and substitute ---are--- for "is"; same line, cancel "a" (two occurrences) and change "one" to ---ones---.

Page 12, line 11, pluralize "movement".

Page 12, line 15, before "At" insert ---While it is very difficult to descri e the action of the water and the movement of the clothes therein produced by the rapid reciprocation of the gyrotator or impeller in the container, whereby the materials are thoroughly cleansed while held in suspension by the peculiar and novel movement and action of the water, I believe that the foregoing description will easily enable anyone skilled in the art to readily construct and operate my invention and fully utilize the herein disclosed method.---.

Claim 1, line 9 after "plane" (first occurrence) insert ---approximately---.

Claim 1, last line cancel "material" and insert ---substantial---.

Cancel claims 2, 3, 6, 33, 34, 37, 40, 41, 42, 43, 45 and 46.

Claim 5, lines 3 and 4 after "impeller" cancel the comma (,).

Claim 5, line 4 cancel "through" and insert ---adjacent---.

Claim 11, line 4 cancel "an" inserted by amendment.

Claim 11, line 5 (first occurrence) change "flange" to ---flanges---.

Claim 11, line 5 cancel "said flange" and insert ---each of said flanges---.

Claim 24, line 1 cancel "A colly" and insert ---An impeller---.

Claim 27, line 1 cancel "colly" and insert ---impeller---.

Claim 35, line 13 cancel "s".

Claim 35, line 14 pluralize "movement".

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Claim 34, next to the last line cancel "to" and insert ---toward---.

(Attention is called to claims 39, 44 and 47 which were added by amendment accompanying Motion under Rule 109 dated June 11, 1927 and allowed by Law Examiner and that these allowed claims are now in the case).

Add the following claims:-

42. A washing machine comprising in combination a tub for containing cleansing liquid and materials to be cleansed, said tub having a bottom portion, and an upwardly extending wall portion the interior surface of which is free from rubbing projections, the juncture of the bottom portion with the upwardly extending portion being inclined to facilitate the movement of currents outwardly and upwardly in the tub, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, having an imperforate base, the upper surface area of which is considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said base being spaced a substantial distance away from the upwardly extending portion of the tub, a rotary reciprocatory drive shaft extending upwardly through the bottom of the tub into the interior thereof, the impeller being mounted upon said shaft for movement therewith in a fixed plane, said impeller having a plurality of blades each of which is of substantial height to provide lateral impelling faces of substantial area, a central portion projecting upwardly from said base, means for imparting a rotary reciprocatory motion to said shaft and the impeller mounted thereon, the impeller and tub being so constructed and arranged as to cooperate while the impeller is reciprocated to cause the washing fluid to be violently agitated and vigorously moved about the tub, and the washable materials driven about the tub in devious paths by the action of the liquid.

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49. A washing machine comprising in combination a tub for containing cleansing liquid and materials to be cleansed, said tub having a bottom portion, and an upwardly extending wall portion the interior surface of which is free from rubbing projections, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, having an imperforate base, the upper surface area of which is considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said base being spaced a substantial distance away from the upwardly extending portion of the tub, a rotary reciprocatory drive shaft extending upwardly through the bottom of the tub into the interior thereof, the impeller being mounted upon said shaft for movement therewith in a fixed plane, said impeller having a plurality of blades each of which is of substantial height to provide lateral impelling faces of substantial area, a central portion projecting upwardly from said base, means for imparting a rotary reciprocatory motion to said shaft and the impeller mounted thereon, the impeller and tub being so constructed and arranged as to cooperate while the impeller is reciprocated to cause the washing fluid to be violently agitated and vigorously moved about the tub, and the washable materials driven about the tub in devious paths by the action of the liquid.

50. In a washing machine, a tub adapted to contain a washing fluid and materials to be cleansed, a rotatively reciprocatory driving shaft extending through the bottom of the tub at the center thereof, a liquid impeller mounted on said shaft near the bottom of the tub, the outer portion of

the impeller being spaced a considerable distance from the interior side surface of the tub and rotatively reciprocatory with the shaft, said impeller comprising a base, a central portion projecting upwardly therefrom and a plurality of uniform blades projecting upwardly from the base and equally spaced and extended radially from the central portion, each blade being of greater area at a position contiguous to the edge of the base than at the center thereof, and means for imparting rotary reciprocatory motion to said shaft and the impeller mounted thereon, the impeller and the tub being so constructed and relatively positioned as to cooperate while the impeller is reciprocated to cause the liquid to be violently forced laterally and upwardly against and in one direction, circumferentially around the inner surface of the tub, and laterally and upwardly against and in an opposite direction, circumferentially around the inner surface of the tub whereby the materials will be thoroughly cleansed while substantially suspended in the water. Add LS cl. 26

81. A washing machine comprising in combination a tub, said tub having a main body portion the interior of which is free of rubbing projections, and a bottom portion, a rotary reciprocatory liquid impeller mounted for operation in a fixed plane near the bottom portion of the tub, the outer portion of which is spaced a considerable distance from the body portion of the tub, a plurality of blades projecting upwardly from the base, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, means for imparting to the shaft and impeller rapid rotary

reciprocatory motion, the impeller and tub being so constructed and relatively positioned as to cooperate while the impeller is reciprocated to cause the washing fluid to be vigorously agitated and rigorously moved about the tub, and the washable material driven about the tub in devious paths by the action of the washing fluid, substantially as described and for the purpose set forth.

82. A washing machine comprising in combination a tub, said tub having a main body portion and a bottom portion inclined outwardly and upwardly toward the body portion, a rotary reciprocatory liquid impeller mounted for operation in a fixed plane near the center of the bottom portion of the tub, the outer portion of which is spaced a considerable distance from the body portion of the tub, said impeller having a base portion and a plurality of blades projecting upwardly from the base, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, means for imparting to the shaft and impeller rapid rotary reciprocatory motion, the impeller and tub being so constructed and relatively positioned as to cooperate while the impeller is reciprocated to cause the washing fluid to be vigorously agitated and rigorously moved about the tub, and the washable material driven about the tub in devious paths by the action of the washing fluid, substantially as described and for the purpose set forth.

83. A washing machine comprising in combination a tub having an interior surface free from rubbing projections, and a bottom portion merging therewith, an imperforate rotary reciprocatory impeller mounted for operation in a fixed plane

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near the bottom of the tub, the outer portion of which is spaced a considerable distance from the interior surface of the tub, said impeller comprising a base of substantial area, a plurality of radially disposed blades, equally spaced on the base and projecting upwardly therefrom, each blade being of substantial height and lateral area, a central portion projecting upwardly from the base, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, and means mounted beneath the tub for imparting to the shaft and impeller a rapid rotary reciprocatory motion, substantially as and for the purposes set forth.

27 cl. A washing machine comprising in combination, a tub having an inner surface free from rubbing projections, said tub having a vertical portion and a bottom portion inclined outwardly and upwardly toward and merging with the vertical portion, an imperforate rotary reciprocatory impeller mounted for operation in a fixed plane near the bottom of the tub, the outer portion of which is spaced a considerable distance from the interior of the vertical portion of the tub, said impeller comprising a base of substantial area, a plurality of uniform radially disposed and equally spaced blades projecting upwardly at substantially right angles from the base, each blade being of substantial height and lateral area, and a central portion projecting upwardly from the base, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, and means mounted beneath the tub for imparting to the shaft and impeller a rapid rotary reciprocatory motion.

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38 86. In a washing machine, a tub having a substantially smooth inner surface free from rubbing projections, adapted to contain cleansing liquid and materials to be cleansed, said tub having a vertical portion and a portion inclined downwardly and inwardly from the vertical portion and merging therewith, an imperforate rotary reciprocatory impeller mounted near the bottom of the tub, the outer portion of which is spaced a considerable distance from the interior of the vertical portion of the tub, comprising a base of substantial area and a plurality of uniform equally spaced radially disposed blades projecting upwardly from the base, each blade being of substantial height and lateral area at its outer end and decreasing in the lateral area toward its inner end, and a central portion projecting upwardly from the base into which the inner end of each of said blades merges, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, and motor mounted beneath the tub for imparting to said shaft and impeller a rapid rotary reciprocatory motion.

39 86. In a washing machine, a tub adapted to contain cleansing liquid and materials to be cleansed, a rotary reciprocatory impeller mounted adjacent the bottom of the tub, comprising a body of substantial area and blades of substantial height and lateral area projecting from the body of the impeller toward the materials while being washed, said impeller and tub being so constructed and arranged that they will cooperate, when the impeller is rapidly reciprocated, to cause the liquid to be positively forced outwardly, upwardly and circumferentially along the interior of the tub in one general direction, and then outwardly, upwardly and circumferentially along and around the tub in the opposite general direction, whereby the materials being washed will be cleansed, the change in direction

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of movement of the impeller being accomplished suddenly and forcibly to whip the liquid and vigorously force it first in one direction and then in the opposite direction through and around the materials while substantially suspended therein by the action of the liquid, and power means for rapidly reciprocating the impeller.

30 M. In a washing machine, a tub having its bottom merging smoothly into its side portion to facilitate the movement of laterally upward circulatory currents, and having the interior of its side portion substantially smooth and free from rubbing elements, for containing a cleansing fluid and materials to be cleansed, a rotary reciprocatory impeller mounted near the bottom of the tub, said tub and impeller being so constructed and arranged as to act in cooperation while the impeller is in operation, for whipping the fluid and violently forcing it first in one and then in an opposite laterally upward circulatory general direction against the interior of the tub and through and around the materials, and suspending the materials in the fluid by the moving fluid while being washed, said impeller comprising a substantially imperforate base and blades of substantial height and free projecting upwardly therefrom, and motor driven means extending through the bottom of the tub for imparting to the impeller a rapid rotary reciprocatory motion, substantially as described.

31 M. In a washing machine, a tub having a substantially smooth interior free from rubbing elements for containing a cleansing fluid and materials to be cleansed, a rotary reciprocatory impeller, mounted near the bottom of the tub,

said tub and impeller being so constructed and arranged as to cooperate while the impeller is operated for violently forcing the fluid first in one and then in an opposite outwardly and upwardly circulatory general direction against the interior of the tub and through and around the materials, and substantially suspending the materials in the fluid while being washed, said impeller comprising a substantially imperforate base and blades of substantial height and free projecting upwardly therefrom, and motor driven means extending through the bottom of the tub for imparting to the impeller a rapid rotary reciprocatory motion.

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92. In a washing machine for cleansing fabrics by forcing cleansing fluids through them while substantially suspended by the action of the fluids as distinguished from pulling or pushing fabrics through fluids or against scrubbing surfaces or otherwise scrubbing them by mechanical means, a tub, a rotary reciprocatory impeller, said tub and impeller being so constructed and arranged to cooperate while the impeller is in operation for whipping the fluid and violently forcing it first in one and then in an opposite outward, axial and circulatory general direction against and approximately parallel to the interior of the tub and through and around the materials and substantially suspending the materials in the fluid while being washed, said impeller comprising an imperforate base and blades of substantial height and free projecting therefrom in a direction toward the materials being cleansed, and power means for rapidly reciprocating the impeller.

93. In a washing machine, a tub substantially free from scrubbing projections for containing a cleansing fluid and materials to be cleansed, a rotary reciprocatory impeller

mounted near the bottom of the tub, said impeller comprising an imperforate base and blades of substantial height and area projecting upwardly therefrom, said tub and impeller being so constructed and arranged as to act in cooperation while the impeller is operated for whipping the fluid and violently forcing it first in one and then in an opposite outwardly upwardly circulatory general direction, against the interior of the tub and toward and through the materials, and substantially suspending the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller.

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In a washing machine, a tub adapted to contain a cleansing fluid and materials to be cleansed, a driving shaft extending into the tub through the bottom thereof, an impeller on said shaft to oscillate therewith, power means for oscillating said shaft and impeller, the impeller comprising an imperforate body portion, and blades extending from said body portion on the side presented to the materials being cleansed, the blades being of a substantial dimension in a direction at right angles to the body portion, said blades and adjacent portions of the body portion of the impeller being so constructed and arranged in the tub relative to the interior that when the impeller is oscillated the fluid in the tub will be thrown violently outward against and around the interior of the tub, from the edge of the impeller, first in one and then in the opposite general direction, thereby the fluid will be driven in circulatory paths away from the impeller, along the sides of the tub in opposed directions, then inwardly and toward the impeller, this cycle being continuously repeated while the materials are substantially suspended by the fluid and out of substantial scrubbing contact with the impeller or tub.

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82. In a washing machine comprising in combination a tub for containing water and goods to be washed, a rotary reciprocatory impeller in the tub, having flange-like means extending therefrom of substantial height in a direction at right angles to the body of said impeller and elongated to provide faces of considerable area for action against the water when the impeller is reciprocated, the impeller and the tub being so constructed, proportioned and arranged that the water is forced violently outward from the impeller and against and in opposed directions along the interior surface of the tub in gyratory paths, so that the goods to be washed will be suspended in the circulating water and out of substantial contact with the impeller, and motor driven means for reciprocating the impeller, substantially as described.

83. In a washing machine, a tub free of scrubbing elements for containing a cleansing fluid and materials to be cleansed, an imperforate rotary reciprocatory impeller, blades on the impeller, said tub and impeller together with its blades being so constructed and arranged with respect to each other that while the impeller is in operation the fluid will be rigorously moved about in devious paths within the tub, and the resultant general direction of the movement of the cleansing fluid is normally radially outward from the central portion of the tub, then vertically and in a general rotary progression about the inside of the tub, first in one and then in an opposite direction, and then inwardly toward the impeller, whereby the fabrics will be cleansed while substantially sustained by the action of the fluid and will be freely and continuously driven about in the fluid by the movements of the fluid in a turbulent manner and in devious paths, and power means for imparting reciprocations to the impeller.

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87 or. In a washing machine, a tub for containing fluid and materials to be cleaned, a rotary reciprocatory impeller having a base and a plurality of blades, said tub and impeller being so constructed and positioned relative to each other that when the impeller is rapidly reciprocated each blade and its adjacent portion of the impeller base will simultaneously drive the cleansing fluid in one end then an opposite outward, upward, circulatory direction and act in cooperation with the interior of the tub to cause violently opposed currents of fluid to meet and flow inwardly and downwardly toward the central portion of the tub and substantially suspend the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller.

Insert the following claim so as to come immediately after claim 11:-

88. The method of washing fabrics, by forcing cleansing fluid through them while substantially suspended by the motion of the fluid, as distinguished from pulling fabrics through the fluid against scrubbing corrugations or otherwise scrubbing them by mechanical means, comprising immersing the fabrics in a washing fluid in a container, then substantially suspending the fabrics in the fluid, and cleansing them while thus suspended, by vigorously agitating the washing fluid and rapidly forcing it against and around the interior of the container first in one end then in an opposite direction and back and forth through and around the fabrics and by so impelling the liquid as to cause gyratory movements of the liquid in one direction, and then cause gyratory movements of the liquid in an opposite direction, in rapid succession.

REMARKS

Previous to the Snyder invention disclosed in the present application, there were four distinct types of washing machines which had been generally made and sold for years. They were:-

1. The dolly round-tub, wooden-stave machines in which the clothes were gripped by a peg-leg dolly and drawn through the water against the corrugated interior of the tub, for scrubbing the clothes. Usually the machines were operated by a crank wheel or lever, the operation of which brought about the rotary reciprocatory movement of the dolly, for the purpose of pulling the clothes through the water, and scrubbing them back and forth against the corrugated sides of the tub.

2. The cylinder type metal machines in which a perforated cylinder was rotatably mounted on horizontal axis inside of a tub; this cylinder had rubbing projections extending longitudinally of its interior. Clothes were placed in the cylinder and as the cylinder was rotated by an engine or motor, the clothes were tumbled about, and rubbed and scrubbed over the projections on the interior of the perforated cylinder.

3. The oscillatory type, round or semi-cylindrical metal or wooden-stave tub machines. These machines had corrugated inner surfaces, and as the tub was oscillated back and forth the clothes were forced against and scrubbed by the corrugations on the interior of the tub. All of these three types of machines simply carried out the scrubbing action theretofore prevalent, very much as the wash woman scrubbed her clothes on the old fashioned scrubbing board, except that this work was done on the interior of the tub.

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4. The vacuum-cup type round wooden or metal tub machines. In these machines a number of cups were attached to a plunger which extended through the top of the machine. The plunger and cups were driven up and down in the tub, and at the same time moved circularly around the tub so as to press the clothes down and scrub them, and to seek water through them upon the engagement of the vacuum cups. In all of these machines the principle carried forward the theretofore used principle of washing clothes by scrubbing them or rubbing them in one manner or another by mechanical means of some character.

The applicant Snyder connected with the Maytag Company, owner of the Snyder application, was thoroughly familiar with all of these types of machines as was nearly everyone else in the public. As a result of years of observation and experimentation Snyder devised and made the invention of his present application. It embodies a radically new principle of construction and operation. In it clothes are washed by rapidly driving currents of water, first, in one and then in an opposed direction, with such rapidity that the clothes are substantially suspended in the water while being washed, and are driven about by the currents of water in a turbulent manner and in devious paths. Putting it tersely, Snyder for the first time washed the clothes while suspended in the washing fluid by the action of the fluid on the clothes, as distinguished from rubbing and scrubbing the clothes with mechanical means. Snyder's invention is revolutionary and was immediately and extensively adopted by the trade. In fact, it became so widely used as to be recognized by Unruh,

the party with whom Snyder has successfully contested an interference proceeding in the Office, as "the well known Maytag Washing Machine". This was as early as January 22, 1923 when Unruh filed his application for patent.

The Maytag machines made under the Snyder application were on the market as early as the Spring of 1922 and have been continuously made and sold since. More than a million of such machines are in use at the present time. The machines have been so widely known and so distinctive in character as to have become recognized as an entirely novel type of machine, and is now known as the gyrator-type, or agitation-type, which refers to the action that takes place in washing the clothes by the movement of the water, as distinguished from the movement of the clothes by other means than the water and against scrubbing parts. Applicant is prepared to show by affidavit the foregoing facts, so far as necessary to supplement the record now on file at the Patent Office in the interference proceeding and in the file wrapper.

Ever since filing the present application Snyder's assignee (The Maytag Company) has been consistently attempting to secure claims which would adequately protect his novel construction and method of operation. This attempt was interrupted by the interference proceeding with Unruh, which has delayed prosecution and the securing of protection, for a period of more than five years, the interference having been declared October 1, 1926. The present application is the parent one and it is only in this application that claims may be secured which afford protection for this radically new construction and method of washing. In view of these

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circumstances and of the long delay incident to the interference proceedings, the owner of the Snyder application is anxious to have the patent brought to speedy issue.

Claims 2, 3, 6, 33, 34, 37, 40, 41, 42, 43, 45 and 46 have been cancelled for the reason that other allowable claims already in the case, and presented by this amendment more adequately cover applicant's invention.

The new claims filed herewith are presented as the result of an understanding reached with the Examiner during a recent personal interview. They have been carefully drawn to bring them into conformity with the suggestions made by the different tribunals of the Patent Office, after consideration of all of the references of record, including those cited in the motions to dissolve, as well as those cited by the Examiner. The many suggestions made by the Examiner during the interview have also been very helpful to applicant in drafting these claims.

In view of the Law Examiner's full discussion of the prior art and its bearing upon applicant's invention, it is believed to be unnecessary to discuss the references specifically and to point out wherein the claims are patentable over them. This is particularly true in view of the fact that the claims are clearly drawn in form and substance to include those characteristics which the Law Examiner has approved and pointed out as distinguishing from the prior art.

For instance, in considering and disposing of the motions to dissolve filed during the recently terminated interference, in his discussion of count 3 (claim 5) appearing on page 228 of the printed transcript of record filed with the U. S. Court of Customs and Patent Appeals, a copy of which is in the Examiner's possession, the Law Examiner stated that said patent was not anticipated by the Coffield patent because the reference "does not disclose 'a rotary reciprocatory disk-like impeller - so constructed and arranged' that the specified gyratory motions of the water may be obtained. This count does not impute the movement of the water solely to the driving of the impeller, but indicates that the impeller is formed in such a way that, upon reciprocation in the inside of the smooth container, it will cause the water to move as recited".

On page 232 of the record, in connection with the discussion of the term "constructed and arranged" the Law Examiner said:-

> "Count 3 clearly recites the container and the impeller and specifies that these elements are 'so constructed and arranged' as to produce the particular motions of water specified in the count. It also recites the motor driven means for rapidly driving the impeller. The form of this count is analogous to the type of claim approved in Young vs. Rick, 115 O.G. 847, in which the use of the word 'means' limited by a statement of function is recognized as a proper method of stating an element of a combination claim. But in the machines disclosed in the pending applications the elements for performing the functions specified in the count are not a separate means but, on the contrary the said function is performed because of the specific construction and arrangement of

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> two elements, namely the container and the impeller. Therefore, count 3, if revised to substitute 'means' for 'so' would not be readable on the disclosure since no separate means is provided for performing the functions referred to. It is accurate in its present form and is no more functional than the claim approved in the last cited decision."

Again on page 237 of the printed transcript of record the Law Examiner, after discussing a series of references, including the French patent to Henin and the British patent to Jardine, held as follows:-

> "The patents held to anticipate count 2 do not anticipate count 3 for the reason that they do not disclose or suggest an 'impeller' - so constructed and arranged that when water and materials to be cleaned are placed in the container and the impeller is reciprocated the water will first be violently forced laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed gyratory direction."

Again on page 238 after discussing prior art patents including the patent to Snyder No. 1,391,214, the Law Examiner pointed out that the references "do not disclose 'an impeller cooperating with the said inclined portion of the tub to force said cleansing substance and materials to be cleansed upwardly in a direction substantially parallel with said inclined portion' and do not anticipate count 5. The patents to Walsh No. 1,487,240, Walker No. 1,244,446, Conover, No. 1,265,382, Alexander No. 51,000, and Wolcott 1,380,224 do not disclose the cooperation of elements defined in the phrase quoted in the last sentence and do not anticipate count 5. In each case, the materials to be cleaned are apparently retained in a basket and are not forced in the direction of the inclined portion of the container."

Again on page 230 the Law Examiner said:-

> "The combination of the Snyder patent with any one of the numerous other patents cited against these counts to anticipate the latter is not obvious nor is it clear that the elements would cooperate to secure the motions of the cleaning substances and materials specified in these counts."

On page 230, attention is particularly invited to the following discussion of the references by the Law Examiner, to wit:-

> "The patents to Alexander No. 51,000, Wolcott 1,360,824, Walker 1,244,446, Welsh 1,457,240, and Conover 1,365,382, do not anticipate count 11. The dish racks and baskets are designed to prevent movement of the goods to be washed."

On page 240, after discussing various other prior art patents, including the patents to Walker and Conover the Law Examiner stated as follows:-

> "The patent to Snyder No. 1,391,214, does not anticipate count 12 since it does not disclose a 'liquid impeller having a centrally raised portion and radially depressed portion, and operable to swirl said materials with a substantially gyratory movement'. The movement of the materials is not gyratory as clearly described on page 1, lines 78 to 81".

In addition to the foregoing, with respect to particular references, the Law Examiner on page 238 points out that the Conover patent No. 1,365,382 does not disclose a method of cleansing fabrics. On the same page that the patent to Walker 1,244,446 does not disclose a method of cleansing fabrics. See also the discussion on page 242 relative to the two patents to Mears.

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As pointed out by the Law Examiner, in the portions of the record above quoted, applicant's invention differs from the various references cited and the claims as now presented bring out the patentable differences in the form indicated by the Law Examiner. The new claims are therefore patentable in substance.

As to the form of the new claims, it is submitted that there is ample authority for the granting of claims in which structure is fully stated and qualified by functional statements. Statements of functional character have been repeatedly approved by the courts as shown by the following authorities:-

In the case of Eibel Process Company v. Minnesota & Ontario Paper Company, 261 U. S. 45, the Supreme Court had before it the Eibel patent No. 845,824,

> "for an improvement on Fourdrinier paper-making machines, whereby, mainly through a substantial elevation of the breast-roll end of the moving screen or 'paper-making wire', the liquid stock discharged upon the screen acquires through gravity an additional speed, enabling it to keep pace with the screen at the critical paper-forming point, thus avoiding injurious disturbances of the stock when the screen moves very rapidly, and making possible a much speedier production of good paper than was theretofore obtained from the machines without the 'improvement.'"

This process was held by the Supreme Court, through the opinion of Chief Justice Taft, to be a new and useful invention.

Among the six claims asserted and considered by the court was claim 12, which reads as follows: (p. 70)

> "12. In a Fourdrinier machine, a downwardly-moving paper-making wire, the declination and speed of which are so regulated that the velocity of the stock down the declining wire, aided by gravity, is so related to the velocity of the wire in the same direction, that drag and friction of the stock are substantially avoided and the stock reaches the point of contact with the wire uniformly on the wire, substantially as described."

In considering this claim and in holding it valid, Chief Justice Taft says: (p. 71)

"This comes nearer to being a process claim but whether it is or not the defendant infringes it."

In this Nibel Co. v. Paper Co. case the only element positively included was a downwardly-moving paper-making wire in a Fourdrinier machine. All of the rest of the claim related to the regulation of the declination and speed of this paper-making wire, by which the waves and ripples on the stock are substantially avoided and the fibers deposited with substantial uniformity on the wire.

Certainly, if the various claims of the Nibel patent sustained by the Supreme Court in this case are proper and valid claims, there cannot be the slightest doubt about the propriety of all of the expressions in each of the claims of the Snyder application.

In Hildreth v. Mastoras, 257 U. S. 27, the Dickinson patent for a candy-pulling machine was involved. Chief Justice Taft writing the opinion of the court and sustaining Dickinson's claim again approved claims containing just such statements as are in the Snyder claims. The claim in Hildreth v. Mastoras reads: (p. 32)

"A candy-pulling machine comprising a plurality of oppositely-disposed candy hooks or supports, a candy-puller, and means for producing a specified relative in-and-out motion of these parts for the purpose set forth."

The underlined portion of this claim certainly contains a statement of the results accomplished, purposes to be served, or function, quite as much as the claims in the Snyder application.

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The Supreme Court held the machine patented as embodying - (p. 34)

> "the generic principle, and works, . . . and mechanically performs, though only in a crude way, the important function by which it makes the substantial change claimed for it in the art,"

and that it was, therefore, a pioneer. Citing Telephone Cases, 126 U. S. 1, 536; Mergenthaler Linotype Co. v. Press Publishing Co., 57 Fed. 802,806.

In Abercrombie & Fitch Company, et al. v. Baldwin, et al., 245 U. S. 198, the Baldwin Reissue Patent No. 13,542, was before the Court. The court states the purposes and functions of the patent -

> "The patent relates to an acetylene gas generating lamp, with an upper reservoir for water and a lower receptacle for calcium carbide, connected by a tube, with a rod extending through the tube and subject to manipulation from above. The inventive features involved lie in securing a proper flow of the water through the tube and access for it to the unslaked carbide, the first, by adopting a comparatively large tube with a size of rod suitably restricting its capacity; the second, by manipulating the rod when necessary to break up slaked carbide at the mouth of the tube in the lower receptacle,"

and specifically referring to two of the claims holds them valid and infringed, notwithstanding the fact that each of these claims defines the functional purpose of the rod as "operating to restrict and thus control the flow of water to the carbide."

Claim 4 reads as follows:

> "4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid, as set forth."

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The underlined portion was italicised in the Supreme Court opinion.

The court held that the controversy mainly centered

"in the water-feeding duct or tube and its restriction by means of a wire or rod and the shape and use of the rod to pierce or stir the carbide."

An examination of the other claims shows similar statements.

The statements in the Snyder application are quite as valuable for the protection of the invention and public as are the claims in any of the patents passed upon by the Supreme Court in the above cases.

In Continental Paper Bag Company v. Eastern Paper Bag Company, 210 U. S. 405, the Supreme Court had occasion to pass upon Section 4888, and in doing so holds: (p. 405).

"Under Sec. 4888, Rev. Stat., the claims measure the invention, and while the inventor must describe the best mode of applying the principle of his invention the description does not necessarily measure the invention."

The patent before the court was the patent to Liddell, No. 558,969, for an improvement in paper bag machines for making what are designated in the trade as self-opening square bags.

The court says - (p. 406)

"The claims in suit do not include mechanism for making a complete bag, but only mechanism for distending one end of a tucked or bellows folded paper tube made by other mechanism, and folding it down into a form known in the art as the 'diamond fold.' This fold is flattened and pasted by other mechanism and forms a square bottom to the bag."

The Supreme Court in sustaining the patents set out fully the claims before it, one of which is sufficient for the purpose of illustration. Claim 1 reads as follows:

"In a paper bag machine, the combination of a rotating cylinder provided with one or more pairs of side forming fingers adapted to be moved toward or from each other, - forming plate also provided with side forming fingers adapted to be moved toward or from each other, means for operating said fingers at definite times during the formative action upon the bag tube, operating means for the forming plate adapted to cause the said plate to oscillate about its rear edge upon the surface of the cylinder during the rotary movement of said cylinder, the whole operating for the purpose of opening and forming the bottom of the bag tube, and means to move the bag tube with the cylinder."

The underlined portions of this claim contain statements showing the purposes to be served by the mechanism employed in making the paper bag. Each of the other two claims in the patent then before the Supreme Court are shown on page 417, and each of these contain statements showing the purpose to be served by the mechanisms employed.

The court in referring to the trial court's opinion says of the claims and their limitation by the description that - (p. 418)

"Nothing in the manner in which the claims are expressed adopts as the elements the detailed description contained in the specification. So far as the details of the description are concerned, they come within the ordinary rule of preferable method."

The court then says - (p. 418)

"We think it is clear that the court considered that Liddell sought to comply with Sec. 4888 of the Revised Statutes. In other words, he filed a description of his invention, explained its principle and the best mode in which he 'contemplated applying that principle,' and did not intend to give up all other modes of application. An inventor must describe what he conceives to be the best mode, but he is not confined to that. If this were not so most patents would be of little worth. 'The principle of the invention is a unit, and inveriably the modes of its embodiment in a concrete invention may be numerous and in appearance very different from each other.'

The court then says: (P. 419)

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"This court said in Cimiotti Unhairing Company Vs. American Fur Refining Company, supra: 'In making his claim the inventor is at liberty to choose his own form of expression, and while the courts may construe the same in view of the specifications and the state of the art, they may not add to or detract from the claim.'"

The court in this opinion in calling attention to the words contained in the claim "Operating means for the forming plate, adapted to cause the said plate to oscillate about its rear edge upon the surface of the cylinder during the rotary movement of said cylinder," and to the criticism made concerning this statement in the claim, approves the method there used and holds it infringed.

The court says: (pp. 421-422)

"Counsel, however, contends that the Circuit Court, in its decision, virtually gave Liddell a patent for a function by holding that he was entitled to every means to cause the forming plate to oscillate about its rear edge.

"The distinction between a practically operative mechanism and its function is said to be difficult to define. Robinson on Patents, Sec. 141, et seq. It becomes more difficult when a definition is attempted of a function of an element of a combination which are the means by which other elements are connected and by which they co-act and make complete and efficient the invention. But abstractions need not engage us. The claim is not for a function, but for mechanical means to bring into working relation the folding plate and the cylinder. This relation is the very essence of the invention, and marks the advance upon the prior art. It is the thing that never had been done before, and both the lower courts found that the machines of the Continental Company were infringements of it. It is not possible to say that the findings of these courts on that fact or on the fact of invention were clearly wrong notwithstanding the great ability of the argument submitted against them."

The claims contained in the Liddell patent and approved by the Supreme Court give ample sanction for every claim in the Snyder application.

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In Ciniotti Unhairing Company v. American Fur Refining Company, 198 U. S. 399, which the Supreme Court cites in the paper bag case above referred to, the court approves the following claim, which contains statements showing the purposes to be served or the results accomplished, and shows that such statements are not functional in the way in which they are sometimes interpreted when functional statements have been held to be objectionable:-

"8. The combination of a fixed stretcher-bar, means for intermittingly feeding the skin over the same, a stationary card above the stretcher-bar, a rotary separating-brush below the same, and mechanism, substantially as described, whereby the rotary brush is moved upward and forward into a position in front of the stretcher-bar, substantially as set forth." (p. 409).

The court after approving this claim says: (p. 410)

"In making his claim the inventor is at liberty to choose his own form of expression, and while the courts may construe the same in view of the specifications and the state of the art, they may not add to or detract from the claim."

In Keystone Manufacturing Company v. Adams, 151 U. S. 139, the Supreme Court in sustaining the Adams patent of October 15, 1872, for an improved corn-sheller, again approves functional statements in claims.

The claim there before the court read: (p. 142)

"The combination with a corn sheller of a series of wings, wheels, or projections, so arranged on a shaft as to revolve in the same direction which the corn is running, and so placed relatively to the throat as to force into the grinding surfaces of hesitating ears, substantially as specified.

The approval of this claim by the Supreme Court clearly shows the claims in the snyder application not to be objectionable as being functionable.

In Expanded Metal Company v. Bradford, 214 U. S. 366, the single claim of the Golding patent of October 9, 1894, for an expanded sheet metal, read as follows:

"The herein described method of making open or reticulated metal work, which consists in simultaneously slitting and bending portions of a plate or sheet of metal in such manner as to stretch or elongate the bars connecting the slit portions and body of the sheet or plate, and then similarly slitting and bending in pieces alternate to the first-mentioned portions, thus producing the finished expanded sheet metal of the same length as that of the original sheet or plate, substantially as described."

The court in approving this claim says: (p. 377)

"It is thus apparent that the method covered by the claim of the patent is accomplished by the two operations indicated and performed in the manner pointed out in the specifications."

(p. 379)

"But the patent in suit, embraced in the claim allowed, shows more than a mere method of making open meshes by simultaneously cutting and stretching the metal. It shows a method by which the metal is first cut and stretched in the manner indicated to make the half diamond, and then a second operation, coordinating with the first and completing the mesh by the manner in which it is performed in connection with the first. It is the result of the two operations combined which produces the new and useful result covered by the claim allowed in the Patent Office, and, which, when read in connection with the specifications, shows substantial improvement in the art of making expanded metal work."

The court further says: (p. 381)

"The important thing in this patent is a method of procedure, not the particular means by which the method shall be practised."

That such claims as are in the Snyder application are clearly in proper form and have been approved by the court is clearly evident by this decision.

In Blattner v. Gill, 251 Fed. 81, the Court of Appeals of the Seventh Circuit in sustaining claims on an elastic packing ring and the method of making this packing ring, clearly shows that such claims as are here made, both as to the method and apparatus, are highly proper.

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In American Steel Foundries v. Damascus Brake Beam Co., 267 Fed. 574, the Court of Appeals for the Seventh Circuit in sustaining a patent on forged metal fulcrums for brake beams, and the method of producing them, again substantiates the position of Snyder in making the claims in issue, and shows that they are proper.

Ex parte Holder, 107 O.G. 833, 1903 C.D. 442, see page 443:

> "Where, however, a claim distinctly specifies a certain structure which is adopted to perform a particular function, there is no objection to setting out in the claim also the function which the structure is adapted so perform."

Ex parte Hoge, 173 O.G. 1081, 1911 C.D. 247, see page 247:

> "It is well settled that where a claim distinctly specifies a certain structure which is adapted to perform a particular function there is no objection to setting it out in the claim. (Ex parte Holder, C.D. 1903, 442; 107 O.G. 833)."

Young v. Rich, 115 O.G. 547, 1904 C.D. 465, see page 466:

> "The first reason assigned for the appeal is that the Examiner erred in holding that the fourth count of the interference issue is not functional and indefinite in form. This count contains as one of the elements of a combination—means extending throughout the length of the frame for supporting a series of bottle-holding racks thereon and permitting the discharge of one of the racks at one end as a new rack is secured in place at the opposite end.
>
> "Young contends that this is a statement of functions which are not supported in the claim by the structure ~~—~~ which they depend. In this contention Young is clearly in error. Means for supporting bottle-holding racks is a structural limitation. The use of the word means limited by a statement of function has long been recognized as a proper method of setting an element of a combination claim. "Ex parte Lesley, C.D. 1899, 181; 88 O.G. 529; ex parte [illegible], C.D. 1896, 29; 72 O.G. 589; ex parte [illegible], C.D. 1898, 91; 73 O.G. 1135; ex parte [illegible], C.D. 1897, 165; 81 O.G. 967)."

Continental Automobile Co. v. A.G. Spalding & Bros.,

177 Fed. 695, C.C.N.Y. 1910, Decision by Circuit Judge Lacombe,

see pages 696 and 697:

"If the claims are for means specified and pointed out, and made complete and specific, as to such means, by reference to the specifications which are to be read with the claims, they are not invalidated by a recital therein of the function to be performed by the combination, or by one or more of its elements, or by a recital therein of the result accomplished by the construction pointed out."

See also:

John P. McGrane Co. v. Levigne Mfg. Co., et al, 177 Fed. 700, affirmed in 194 Fed. 112.

The attitude of the Patent Office with respect to claims of the character now presented, aside from the views expressed by the Law Examiner, are clearly expressed by the Board of Appeals in Ex parte Asbury, 5 U.S. Pat. Q., 120. In this case the following claim, among others was before it on appeal:-

"In a radio apparatus, a plurality of tuning units a part of each of which is movable, means connecting said movable parts bodily movable to move them collectively, and means included in the first means associated with one of said units bodily movable with the first named means during collective movement of the units and rotatable to move the unit with which it is associated individually."

The Board in sustaining the patentability of the foregoing claim, held as follows:-

"With a claim in such form it is not necessary to specify all the elements which may be necessary to make up such means to avoid a holding of incompleteness. Nor can a claim positively reciting 'means' for performing a specified function be held functional for that reason."

The Asbury case was recently cited by the Board with approval in the case of Ex parte Whitney, 9 U.S. Pat. Q., 442.

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Attention is also invited to In re Spencer, 8 U.S. Pat. Q., 565 as expressing the view of the U. S. Court of Customs and Patent Appeals.

Among the claims on appeal to the Court was the following:-

> "A thermostatic device comprising an initially curved bimetallic strip and means cooperating with the opposite ends thereof, adapted first to resist the tendency of said strip to change its curvature in response to strains within said strip due to temperature changes, and then to aid said strip in assuming its new shape in response to strains induced therein by temperature changes, said strip delineating a simple curve at the beginning and end of its movement, but a compound curve at intermediate portions of its movement."

In holding the above claim to be patentable, the Court made the following comment:-

> "The recitation therein of the combined curvature created in the thermostatic strip, in view of the device disclosed in the specification and drawing, cannot properly be said to be the recital of a function, but rather to be a recital in aid of the related description of the device itself."

In view of the foregoing it is submitted that each and all of the claims now in the case, including those submitted with this amendment, are clearly patentable, and early allowance is accordingly requested.

Very respectfully,

Wallace R. Lane
Attorney

January 26, 1932.

MAR 18 32

PATENT OFFICE
MAR 19 1932

IN THE UNITED STATES PATENT OFFICE

In re Application of
Howard F. Snyder,
Serial No. 568,158, Div. 25, Room 5709
Filed June 14, 1922,
For WASHING MACHINES.

Hon. Commissioner of Patents,
Present.

Sir:

A supplemental oath by Lettie Snyder, executrix of the estate of Howard F. Snyder, deceased, is filed herewith together with an affidavit of John Mikulasek as to the sales of the Maytag Washing Machine embodying the invention here involved.

Very respectfully,

Wallace R. Lane
Attorney

March 18, 1932.

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MAR 18 32

IN THE UNITED STATES PATENT OFFICE

In re Application of
Howard P. Snyder,
Serial No. 568,158 WASHING MACHINES
Filed June 14, 1922,
Div. 25, Room 5709

SUPPLEMENTAL OATH UNDER RULE 46.

STATE OF IOWA)
) ss:
COUNTY OF JASPER)

Lottie G. Snyder of Newton, Iowa, being duly sworn, deposes and says that she is the executrix of the estate of Howard P. Snyder the above identified applicant, deceased; that she has carefully read the amendment filed in the above identified application January 26, 1932; that to the best of her knowledge and belief the subject matter of said amendment was part of Howard P. Snyder's invention; was invented before he filed his original application above identified for such invention; was not known or used before his invention; was not patented or described in a printed publication in any country more than two years before his application; was not patented in any foreign country on an application filed by himself or his legal representatives or assigns more than twelve months prior to his application; was not in public use or on sale in this

country for more than two years before the date of his application, and has not been abandoned.

Mrs Lettie Snyder

Subscribed and sworn to before me this 23rd day of January, 1932.

Lewis K. Johnson
Notary Public.

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MAR 18 32

UNITED STATES PATENT OFFICE

In re Application of
HOWARD F. SNYDER, (Deceased)
Serial No. 508,182,
Filed June 14, 1928,
Div. 25, Room 315.

Washing Machine

AFFIDAVIT

STATE OF IOWA
County of Jasper } ss

JOHN MIKULASEK, of Newton, Iowa, who being first duly sworn, says:

That for some years prior to June 14, 1928, the date when the above application of Howard F. Snyder was filed at the United States Patent Office, and continuously since, he has been employed by The Maytag Company, of Newton, Iowa, the owner of the said Snyder application, and during all of such period prior to Snyder's death he was in close working contact with said Snyder, and is familiar with the invention disclosed in said application, and with its manufacture and extensive sale by The Maytag Company;

That previous to 1928 there were various old types of washing machines being generally made and sold in the United States, among which were -

(1) The dolly type, round tub wooden stave leg machine. In this type of machine the clothes were scrubbed by forcing them against rubbing projections of one kind or another.

(2) The cylinder type. In these machines the clothes were placed in a rotating or oscillating cylinder having rubbing projections extending throughout its length and, as the cylinder was rotated or oscillated, the clothes were scrubbed on the rubbing projections on the interior of the cylinder.

(3) The oscillating type machine. In these machines the tubs themselves were generally oscillated and the clothes thereby forced against rubbing projections on the interior of the machine and scrubbed thereby.

(4) The vacuum cup type machine. In these the vacuum cup plungers were driven up and down against the clothes and the clothes cleaned by the rubbing action of the vacuum cups and by the action of the so-called vacuum.

Generally speaking, this was the commercial condition at the time Snyder made the invention shown in the above identified application. The present Snyder invention embodies a radically new principle of washing clothes, fabrics or other materials. It consists in rapidly forcing washing fluids in a container first in one and then an opposed direction through and around the materials to be washed and at the same time substantially suspending the clothes in the fluids while being washed. In other words, the cleaning of the clothes was effected largely by the fluids while suspended in the fluids by the action of the fluids themselves as distinguished from rubbing or scrubbing them on or by mechanical means in the previously known ways.

The Snyder washing machine was so radically new and so different from anything that preceded it that when it was offered to the public in 1922 great difficulty was had in initially introducing it. However, once it was introduced, there came to be a great public demand for it. This was largely due to its great efficiency and superiority over previous types of machines. The invention disclosed in this application accomplished results and had advantages not present in or possessed by previous types of machines. Some of these results and advantages are pointed out in the Snyder specification with which I am familiar.

So great was the demand for these machines that within a short time after they were sold they largely supplanted the Maytag Company's manufacture of various of the above types of

washing machines which had for many years been previously made and sold in large quantities by The Maytag Company.

From April, 1922, to the end of 1926, The Maytag Company sold between 600,000 and 700,000 of the machines embodying the Snyder invention of the present application, and from 1922 up to the present time The Maytag Company sold approximately 1,500,000 of these machines, most of which are still in use in homes all over the United States.

The inherent advantages possessed by the Snyder machine and its advantages over what preceded it have been largely responsible for the tremendous sales and the ever-increasing demand for this type of machine.

So radically different is the machine of the Snyder application from anything that prededed it that it has come to be recognized as a radically new and distinct type of washing machine. It is generally known to the public as the "gyrator" or "agitator" type of machine. This distinguishes it from any previously known type. This new type of washing machine has, since it was first put upon the market, come to be the largest selling type of washing machine in the United States. It is well known throughout the entire country.

The business of The Maytag Company is and has been for a number of years largely based on the manufacture and sale of this novel type of washing machine.

John Mikulasek

Subscribed and sworn to before me this 30th day of December, 1931.

Notary Public.

MAR 18 32

PATENT OFFICE
MAR 19 1932

IN THE UNITED STATES PATENT OFFICE

In re application of
Howard F. Snyder,
Serial No. 668,158, Div. 25, Room 5709
Filed June 14, 1932,
for WASHING MACHINES.

- - - - - - - - - - - -

Hon. Commissioner of Patents,
Present.

Sir:

ATTENTION: Chief Draftsman.

The Office Draftsman is requested to apply the reference ordinal "69" to Figure 4 of the drawing as indicated in red ink on the attached print. Kindly charge the cost to the Patent Office account of Parkinson & Lane.

Very respectfully,

William R. Lane
attorney

March 18, 1932.

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Fig. 4.

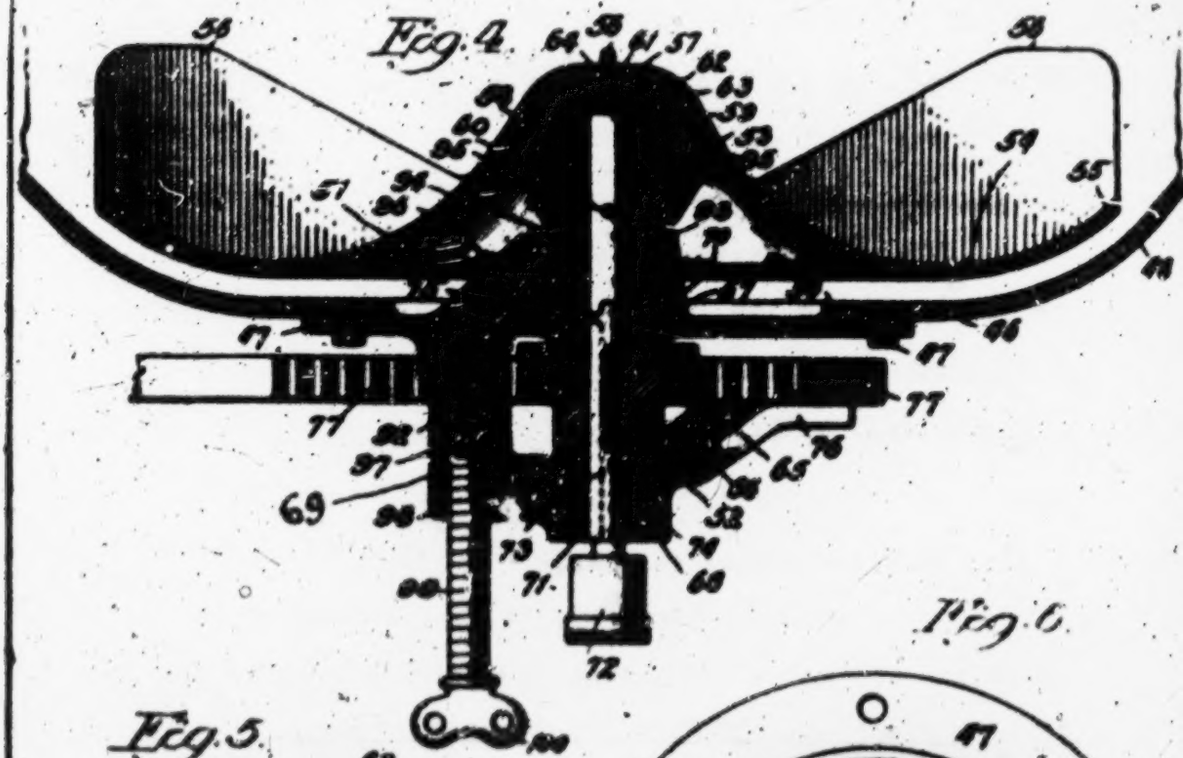


Fig. 6.

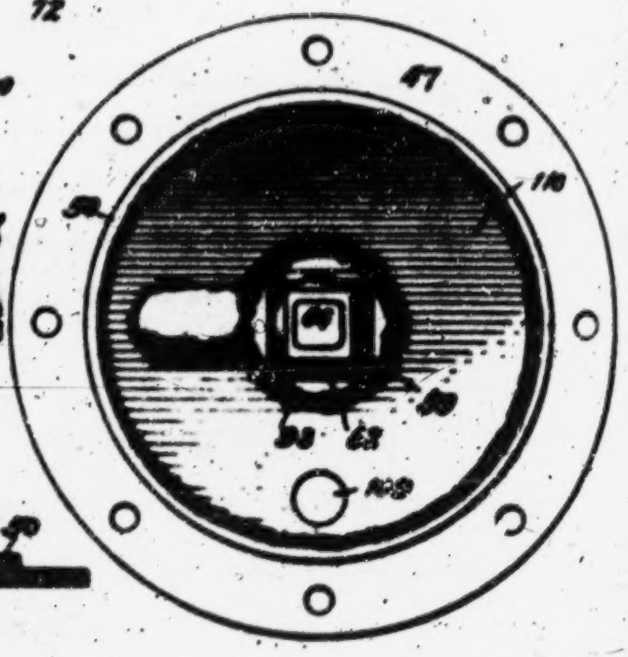
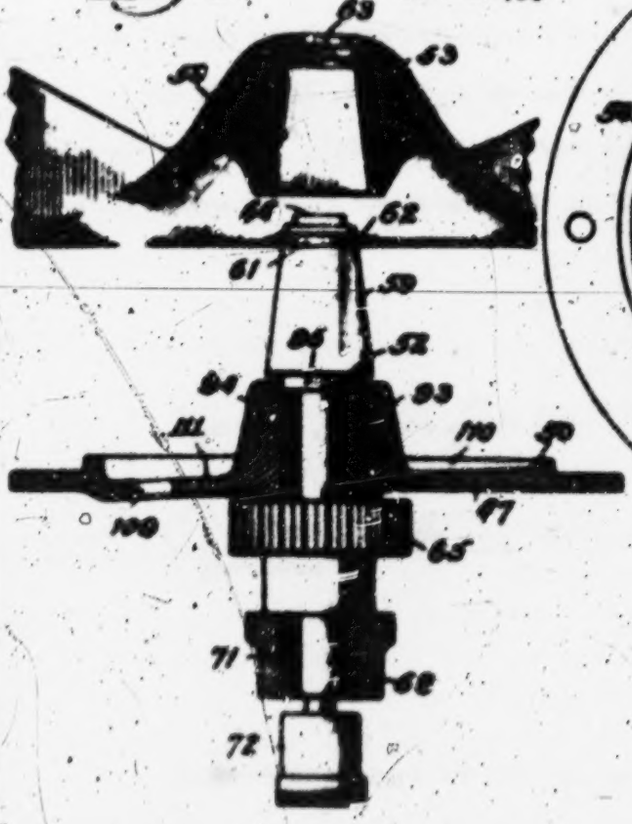


Fig. 5.



Inventor
Howard F. Snyder.
by Wallace R. Lane.
Attorney

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DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

Please find below a communication from the EXAMINER in charge of this application.

Thomas E. Robertson
Commissioner of Patents.

Mar. 24, 1932.

Applicant: H. F. Snyder

Ser. No. 568,158
Filed June 14, 1922
For Washing Machines

Wallace M. Lane,
Marquette Bldg.,
Chicago, Illinois.

MAR 24 1932

Additional references cited against the claims:

Walker	1,259,959	Mar. 19, 1918	259/101
Jardine (British)	18,202	Oct. 27, 1891	259/101 (1 sht.)
Henin et al. (French)	363,514	Feb. 20, 1906	259/101

Claims 1, 5, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 23, 24, 27, 30, 35, 36, 39, 44, and 47 to 65 inclusive are now on file in the application.

The new revised claims 1, 5, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 23, 24, 27, 30, 35, 36, 39, 44, 47, 50, 54, 55, 56, 57, 58, 59, 60, 63 and 64 inclusive are allowable.

Claims 48 and 52 are rejected on Coffield et al. of record in view of either Nielsen of record or Walker, taken separately. To incline the bottom of Coffield et al. would not constitute invention in view of Nielsen or Walker.

Claims 49 and 53 are rejected as not patentably distinguishing from Coffield et al. To make the blades b of Coffield et al. with lateral impelling faces of substantial area would be merely a matter of degree.

Claim 51 is rejected on Coffield et al. on which it is readable.

Claim 61, 62 are rejected as not structurally defining over Jardine. The function of claim 61 differs from Jardine but the structure does not, the impeller being the only element particularly specified. Claim 62 does not define structurally or

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functionally except as to suspension of materials in water.

Claim 4 is rejected as indefinite. The word "gyratory" does not define over Henin in that it merely means that circular and rotary movements be imparted to the liquid and it is believed apparent that Henin's device is capable of causing such movements.

Examiner.

H.S.

MAR 31-32

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IN THE UNITED STATES PATENT OFFICE

In re Application of

HOWARD P. SNYDER,

Ser. No. 868,188, WASHING MACHINE

Filed June 14, 1932,

Div. 25, Room 5708

AMENDMENT

Hon. Commissioner of Patents,

Washington, D. C.

Sir:

Responsive to Office Action of March 24, 1932, applicant amends as follows:-

Substitute for claim 48:-

12 48. A washing machine comprising in combination, a tub for containing cleansing liquid and materials to be cleansed, said tub having a bottom portion, and an upwardly extending wall portion the interior surface of which is free from rubbing projections, the juncture of the bottom portion with the upwardly extending portion being inclined to facilitate the movement of currents outwardly and upwardly and along the interior surface of the tub, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, the upper surface area of which is considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said impeller being spaced a substantial distance away from the upwardly extending portion of the tub, a rotary reciprocatory drive shaft extending upwardly through the bottom of the tub into the interior thereof, the impeller

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being mounted upon said shaft for movement therewith in a fixed plane, said impeller having on its upper surface a plurality of upstanding wing-like blades, each of which is of substantial height and length, and provided with lateral impelling faces of substantial area, the impeller and tub being so constructed and arranged relative to each other as to cooperate while the impeller is reciprocated for whipping the fluid and violently forcing it first in one and then in an oppositely upward circulatory direction against the interior of the tub and through and around the materials being washed, and substantially suspending the materials in the fluid by the moving fluid, and means for imparting a rapid rotary reciprocatory motion to the said shaft and impeller.

Substitute for claim 69:-

23 cl. A washing machine comprising in combination, a tub for containing cleansing liquid and materials to be cleansed, said tub having a bottom portion and an upwardly extending wall portion, the interior surface of which is free from rubbing projections, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, having a base and a plurality of blades, each of which is of substantial height and lateral area, and a central portion projecting upwardly from the base, the upper surface area of the base being considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said base being spaced a substantial distance away from the upwardly extending portion of the tub, said tub and impeller being so constructed and positioned relative to each other that when the impeller is rapidly reciprocated each blade and its adjacent portion of the

impeller base will simultaneously drive the cleansing fluid in one and then an opposite outward circulatory direction toward and around the clothes, and set in cooperation with the interior of the tub to cause violently flowing opposed currents of liquid to meet and flow inwardly and downwardly toward the central portion of the tub, and substantially suspend the materials in the fluid while being washed, a rotary reciprocating drive shaft extending upwardly through the bottom of the tub into the interior thereof for supporting the impeller for movement in a fixed plane, and power means for rapidly reciprocating the shaft and impeller for the purposes set forth.

Substitute for claim 24

25 25. A washing machine comprising in combination, a tub, said tub having a main body portion, the interior of which is substantially free of scrubbing projections, and a bottom portion, a rotary reciprocatory liquid impeller mounted for operation in a fixed plane in the tub, the outer portion of which is spaced a considerable distance from the body portion of the tub and having a plurality of blades projecting therefrom, said tub and impeller being so constructed and positioned relative to each other that when the impeller is rapidly reciprocated each blade and its adjacent portion of the impeller base will simultaneously drive the cleansing fluid in one and then an opposite outward circulatory direction away from the plane of the impeller through and around the clothes, and set in cooperation with the interior of the tub to cause violently opposed currents of fluid to meet and flow inwardly and

toward the impeller, whereby the materials are substantially suspended in the fluid and cleansed while thus suspended, a driving shaft extending into the tub on which the impeller is mounted for movement therewith, and power means for rapidly reciprocating the shaft and impeller.

Substitute for claims 32 and 33:-

26 cf. In a washing machine for cleansing fabrics by forcing cleansing fluid through them while substantially suspended by the action of the fluid, so distinguished from pulling or pushing the fabrics through the fluid or against scrubbing surfaces, or otherwise scrubbing them by mechanical means, a tub, a substantially imperforate rotary reciprocatory impeller mounted to operate in a fixed plane having blades of substantial height and area projecting therefrom in a direction toward the fabrics while they are being cleansed, said tub and impeller being so constructed and arranged as to cooperate while the impeller is in operation for whipping the fluid and violently forcing it ~~direct in one and then in an opposite outward radial and circumferential general direction toward the fabrics and against and approximately parallel to the interior of the tub~~, and through and around the materials, and substantially suspending the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller. Add cl. 27-34

Claim 31, line 1, after "tub" insert --whose interior is free from substantial scrubbing elements; line 8, after "said" insert --tub,--.

1263

Substitute for claim 68:-

I Dec 37 68. A washing machine comprising in combination, a tub for containing water and goods to be washed, a rotary reciprocatory impeller in the tub having flange-like means extending therefrom of substantial height and lateral area, said tub and impeller, together with its flange-like means, being so constructed, proportioned and arranged with respect to each other that while the impeller is in operation the fluid will be vigorously moved about in devious paths within the tub, and the resultant general direction of the movement of the cleansing fluid and the materials to be cleansed is normally radially outward from the central portion of the tub, then vertically, and a general rotary progression about the inside of the tub first in one and then an opposite direction, and then inwardly toward the impeller whereby the fabrics will be cleansed while substantially sustained by the action of the fluid, and will be freely and continuously driven about in the fluid by the movements thereof in a turbulent manner, and in devious paths, and motor driven means for rapidly reciprocating the impeller for the purposes set forth.

Add K4 ch 363

Substitute for claim 69:-

39 69. The method of washing fabrics by forcing cleansing liquid through and around them while substantially suspended by the action of the fluid, as distinguished from pulling fabrics through the fluid against scrubbing corrugations, or otherwise scrubbing them by mechanical means, comprising immersing the fabrics in a washing fluid in a container, then vigorously and rapidly impelling the washing

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fluid in one and then in an opposite outward circulatory direction away from the plane of the source of impulsion and through the fabrics and circumferentially along the interior of the container in rapid succession, and causing these violently opposed currents of fluid to meet and flow inwardly and toward the central portion of the container, and toward the source of impulsion thereby substantially suspending the fabrics in the fluid and cleansing them while thus suspended.

add the following:-

37 [illegible]. The method of washing fabrics by forcing cleansing fluid through them while substantially suspended by the action of the fluid, as distinguished from pulling fabrics through the fluid against scrubbing corrugations, or otherwise scrubbing them by mechanical means, comprising immersing the fabrics in a washing fluid in a container, then vigorously agitating the washing fluid and rapidly forcing it toward the fabrics and away from the plane of the source of agitation and along the interior surface of the container first in one and then in an opposite, direction, back and forth through and around the fabrics, and causing the violently moving opposed currents of liquid to meet and flow inwardly and vertically toward the source of agitation, whereby the fabrics are caused to be freely moved about by the action of the fluid and cleansed while thus moved.

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REMARKS

The suggestions made by the Examiner at an interview today which have resulted in the presentation of the foregoing claims, which are now believed to be in condition for allowance, are much appreciated. At this interview these claims were considered, in view of the art recently cited by the Examiner and other art already of record. There was pointed out to the Examiner the following in connection therewith:-

Applicant has experienced great difficulty in the selecting language to claim adequately and define properly his invention due to the peculiar water action in the clothes which causes them to be so rapidly cleansed while sustained in the water by the devious rapid movements thereof though the general paths of movement are readily discernible.

Nothing in the prior art cited accomplishes the result of the Snyder invention nor are there any devices in the art which functions in a similar manner or can accomplish the same result. Neither Coffield et al (owned by applicant's assignee) Nielsen, Walker, Jardine nor Benin last cited by the Examiner meet the spirit of the invention as attempted to be depicted in the only claims (48, 49, 51, 54, 55, 61, 62, 65) now under rejection. In fact the operative action of each is diametrically opposed to that of Snyder.

Snyder depends for the washing of fabrics upon the rapid and vigorous movements of the water in the tub for sustaining the fabrics in the water out of substantial

scrubbing contact with any mechanical parts and simultaneously causing the fabrics to be washed by the action of the water alone while thus sustained.

On the other hand, Coffield et al, Jardine and Konin each rely upon raising the clothes with a mechanical pin or other dolly and dragging them through the water and vigorously scrubbing them. Nielsen and Walker are not clothes washing machines and have nothing in common with Snyder.

The new claims now substituted for those at present under rejection are filed in lieu thereof without waiving anything of the invention attempted to be covered by those for which the herein are substituted, but have been recorded to try to better express and define the elements and functions of the Snyder machine and the novel method of washing which may be accomplished by it.

Very respectfully,

Walter Glass

Attorney

March 31, 1932.

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1267

IN THE UNITED STATES PATENT OFFICE

In re Application of
Howard F. Snyder,
Serial No. 568,158, WASHING MACHINE
Filed June 14, 1922,
Div. 25, Room 5709.

Hon. Commissioner of Patents,
Present.

Sir:

Supplemental to the amendment filed March 31, 1932, applicant amends as follows:-

Claim 56, line 4 before "base" insert ---substantially imperforate---.

Claim 56, line 10 cancel "against" and substitute ---along---; lines 11 and 12 cancel "against and around" and substitute ---along---.

Claim 59, line 6, after "impeller" (first occurrence) insert ---mounted for general operation in a fixed plane---.

Claim 64, line 2 after "impeller" insert ---mounted for oscillation in a substantially fixed plane---.

Claim 64, line 3 before "base" insert ---substantially imperforate---.

Claim 67, line 13 before "circulatory" insert ---upward---.

Claim 68, line 16 at end of line after "and" (second occurrence) insert ---in a general vertical direction---.

Claim 69, line 6, after "a" (second occurrence) insert ---substantially imperforate---.

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Claim 69, line 10 after "arranged" insert ---as---; line 12 cancel "first in one and then in"; cancel lines 13 and 14; line 15 cancel "to the interior of the tub," and substitute outwardly, upwardly and in a general vertical and circulatory movement and circumferentially of the tub first in one and then in an opposite direction---.

Claim 70, line 2 after "washed," insert ---said tub being substantially free from rubbing projections---.

Claim 71, line 10 before "along" insert ---circumferentially---.

Claim 73, line 9 cancel "and" and insert ---vertically---; line 10 after "opposite" insert ---circumferential---.

Very respectfully,

William R. Lane
Attorney

April 12, 1929.

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UNITED STATES PATENT OFFICE

In re Application of
HOWARD F. SNYDER,
Ser. No. 568,158,
Filed June 14, 1922,
Div. 25, Room 5709

WASHING MACHINE

SUPPLEMENTAL AMENDMENT

May 11, 1932

Hon. Commissioner of Patents,
Washington, D. C.

Sir:-

Supplemental to amendment filed April 13, 1932, applicant, for the correction of certain errors, further amends as follows:

Page 2, line 4, please let "These and the other objects" be the beginning of a NEW paragraph.

Page 3, line 1, please let "As another object of the invention" be the beginning of a new paragraph.

Page 3, line 19, please let the insert "Still further objects of this invention" be the beginning of a new paragraph.

Page 7, line 23, please let the insert "For the purposes of exemplifying my invention" be the beginning of a new paragraph.

Page 1, line 2, after "Snyder" insert a comma (,).

Page 2, line 5, after "invention" cancel the comma (,).

Page 2, line 6, after "machine" insert a comma (,); line 7, after "gyratator" cancel the comma (,); line 15, after "tub" insert a comma (,); line 15, at the end of the insert

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between "go coast" insert a comma (,) after "therein"; line 18, insert a comma (,) after the inserted word "liquid"; line 25, after "projections" insert a comma.

Page 3, line 13; after "paths" insert a comma (,).

Page 5, line 2, after "scale" cancel the comma (,).

Page 7, line 7, after "42" cancel the comma (,); line 11, after "positions" cancel the comma (,); line 12, after "tub" cancel the comma (,); line 23, in the insert after "omitted", line 7 of said insert, please insert a comma (,) after "tub."

Page 8, in the substitution for lines 4 to 12, line 21 of page 2 of said substitution, change "lob-shaped" to - lobe-shaped.

Page 9, line 10, after "76" cancel the comma (,).

Page 10, line 17, after "rotate" insert a comma (,).

Page 11, line 19, after "106" insert a comma (,); line 21, after "107" insert a comma (,).

Claim 24, line 2, after "trough" (first occurrence) insert a comma (,); line 5, after "trough" (first occurrence) insert a comma (,).

Claim 23, line 2, change "cu-shaped" to cup-shaped; same line, change "frust-conical" to frusto-conical; line 5, change "frust-conical" to frusto-conical; line 5, change "around" to - a round.

Claim 1, line 7, after "agitation" insert a comma (,).

Claim 36, line 1, after "machine" insert a comma (,).

Claim 54, line 1, after "combination" insert a comma (,).

Claim 58, line 4, after "impeller" cancel the comma (,).

Claim 63, line 7, after "tub" insert a comma (,).

Claim 66, line 1, after "combination" insert a comma (,).

Claim 67, line 1, after "combination" insert a comma (,).

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Claim 69, line 1, after "combination" insert a comma (,).

Claim 70, line 1, after "combi..ation" insert a comma (,).

REMARKS

The above amendments are made merely to correct certain obvious errors and informalities. As this application has been in condition for allowance for some time inquiry is made as to when such action may be expected.

Respectfully submitted,

Hollaway R. Lane

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ADDRESS ONLY
THE COMMISSIONER OF PATENTS
WASHINGTON, D. C.

181
Div. 25 3709 JCS:LEC **Serial No.** 60,138

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON June eleventh, 1932.

Howard F. Snyder, Assor. etc.,

Your APPLICATION for a patent for an IMPROVEMENT in Washing Machines

filed June 14, 1922 has been examined and ALLOWED with 39 claims.

The final fee, TWENTY-FIVE DOLLARS, WITH $1 ADDITIONAL FOR EACH CLAIM ALLOWED IN EXCESS OF 20, must be paid not later than SIX MONTHS from the date of this present notice of allowance. If the final fee be not paid within that period, the patent will be withheld, but the application may be renewed within one year after the date of the original notice with a renewal fee of $25 and $1 additional for each claim in excess of 20.

The office delivers patents upon the day of their date, on which date their term begins to run. The preparation of the patent for final signing and sealing will require about four weeks, and such work will not be begun until after payment of the necessary final fee.

When the final fee is paid, there should also be sent, DISTINCTLY AND PLAINLY WRITTEN, the name of the INVENTOR, TITLE OF THE INVENTION, AND SERIAL NUMBER AS ABOVE GIVEN, DATE OF ALLOWANCE (which is the date of this circular), DATE OF FILING, and, if assigned, the NAMES OF THE ASSIGNEES.

If it is desired to have the patent issue to an ASSIGNEE OR ASSIGNEES, an assignment containing a REQUEST to that effect, together with the FEE for recording the same, must be filed in this office on or before the date of payment of the final fee.

After issue of the patent, uncertified copies of the drawings and specifications may be purchased at the price of TEN CENTS EACH. The money should accompany the order. Postage stamps will not be received.

The final fee will NOT be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

NOTICE.—WHEN THE NUMBER OF CLAIMS ALLOWED IS IN EXCESS OF 20, NO SUM LESS THAN $25 PLUS $1 ADDITIONAL FOR EACH CLAIM IN EXCESS OF TWENTY CAN BE ACCEPTED AS THE FINAL FEE.

Respectfully,

Thomas E. Robertson
Commissioner of Patents

Wallace A. Lane,
Marquette Bldg.,
Chicago, Illinois.

565

IN REMITTING THE FINAL FEE GIVE THE SERIAL NUMBER AT THE HEAD OF THIS NOTICE.

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1273

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UNITED STATES PATENT OFFICE
WASHINGTON

Address only "The Commissioner of Patents, Washington, D. C." and not to individuals by name

No. 32 B

Please find below a communication from the EXAMINER in charge of this application

June 11, 1932

Thomas E. Robertson
Commissioner of Patents

Applicant Howard F. Snyder

Ser. No. 568,158
Filed June 19, 1922
For Washing Machines

Wallace M. Lane
Marquette Bldg.,
Chicago, Illinois.

In accordance with the provisions of Order No. 2308, dated March 12, 1917, which reads in part as follows:

. . . . . .

Obvious informalities in the application may be corrected by the examiner, but said correction must be in the form of an amendment, approved by the Principal Examiner, in writing, placed in the file, and made a part of the record. The changes specified in the amendment will be entered by the clerk in the regular way.

. . . . . .

the changes, hereinafter specified, are made by the examiner in the application above identified.

Should these changes not be satisfactory to the applicant, appropriate amendment may be proposed under the provisions of Rule 78, provided the specification has not been printed.

The application has been amended as follows:

The renumbering of the claims on the preparing the case for issue has been made as follows:

Former number.	Renumbered for issue as.
1	1
5	3
25 (amdt. 6-17-26)	19
26 (" ")	20
4 (" 6-10-25)	4
5 (" ")	5
21 (" ")	14
25 (" ")	16
29 (" ")	18
45 (" 6-30-23)	15
32 (" 10-19-22)	13
12 (original)	6
13 (")	7
16 ("	8

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2 (568,158)

Former number.	Renumbered for issue as,
✓ 20 (orginal)	9
✓ 21 (")	10
✓ 22 (")	11
✓ 29 (")	12
66	22
67	23
68	25
69	26
70	35
71	38
72	39
50	24
54	27
55	28
56	29
57	30
58	31
59	32
60	33
61	34
63	36
64	37
39 (amdt. 6-13-27)	2
44	17
47	21

C.F. Berkely
Examiner.

1273

U.S. Patent Office

U.S. Patent Office

FINAL FEE PAID TO THE COMMISSIONER OF PATENTS

(Use symbol to give correct Serial No.)

Serial No. 668,185

INVENTOR:

Howard F. Snyder,

PATENT TO BE ISSUED TO

Inventor

NAME OF INVENTION, AS ALLOWED:

Washing Machines

DATE OF PAYMENT:

June 17, 1924.

FEE:

$44.00

DATE OF FILING:

June 14, 1923.

DATE OF CIRCULAR OF ALLOWANCE:

June 11, 1923

The Commissioner of Patents will please apply the accompanying fee as indicated above.

WALLACE R. LANE

Attorney.

SEND PATENT TO

Allen Bldg.,

Northern Bldg.,

Chicago, Ill.

Fees fee will not be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

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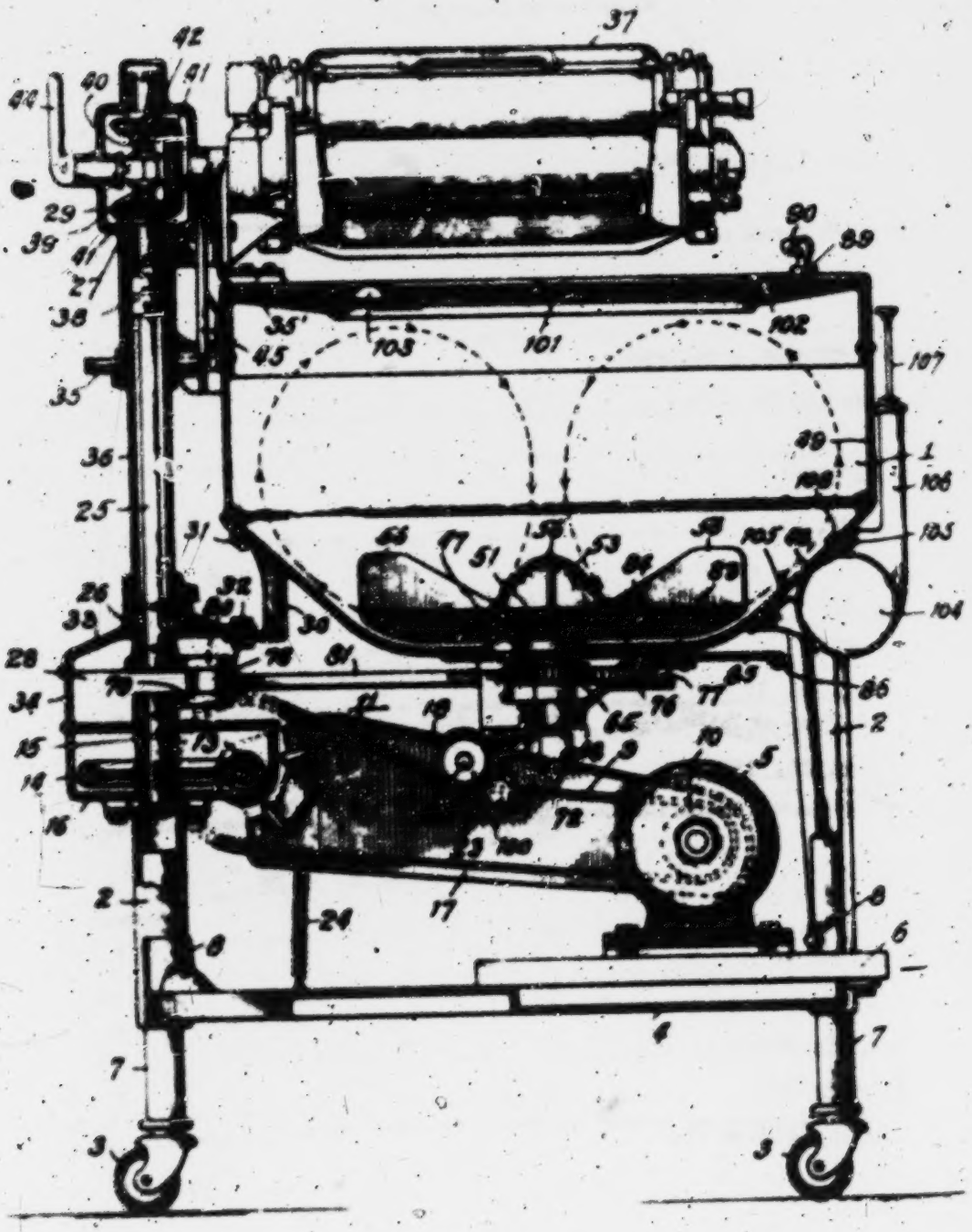
1926

July 12, 1932. H. F. SNYDER 1,866,779

WASHING MACHINE

Filed June 14, 1922 3 Sheets-Sheet 1

Fig. 1.



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Inventor
Howard F. Snyder
by Wallace R. Lane

Atty

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July 12, 1932. H. F. SNYDER 1,866,779

WASHING MACHINE

Filed June 14, 1922 3 Sheets-Sheet 2

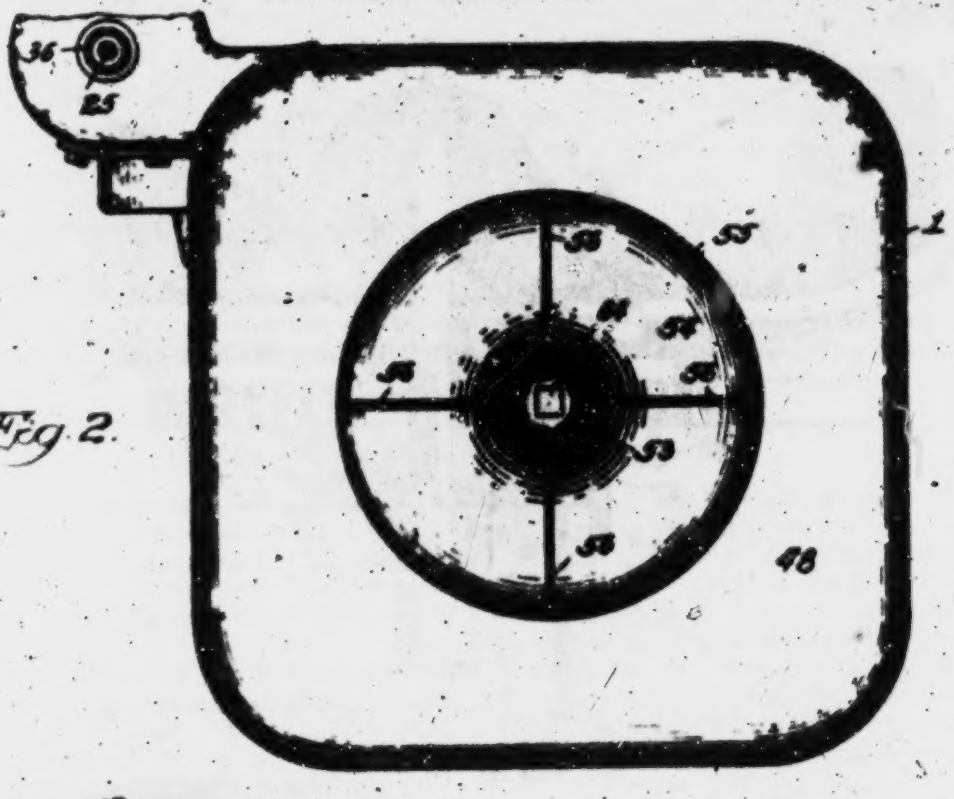

Fig. 2.

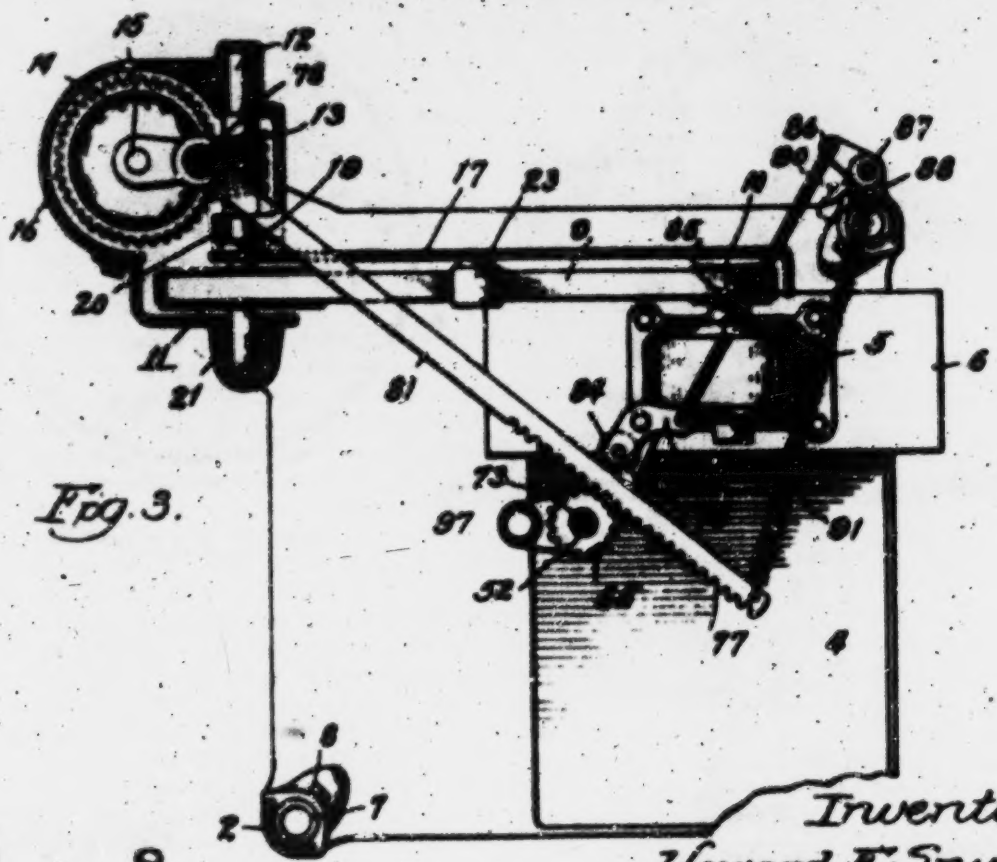

Fig. 3.

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WASHING MACHINE

Filed June 14, 1922 3 Sheets-Sheet 3

Fig. 4.

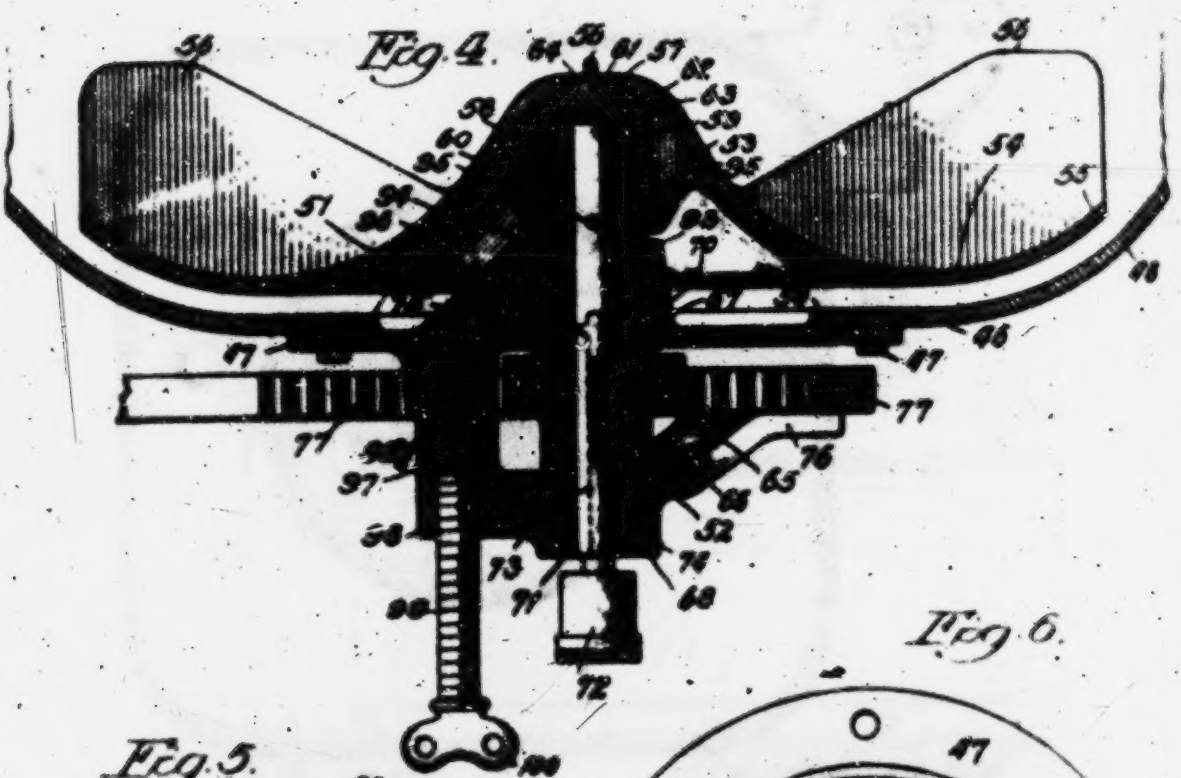


Fig. 6.

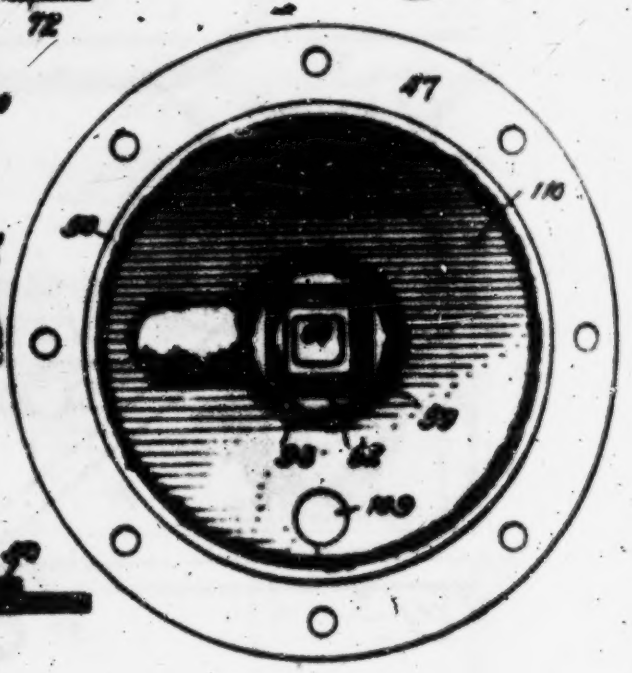
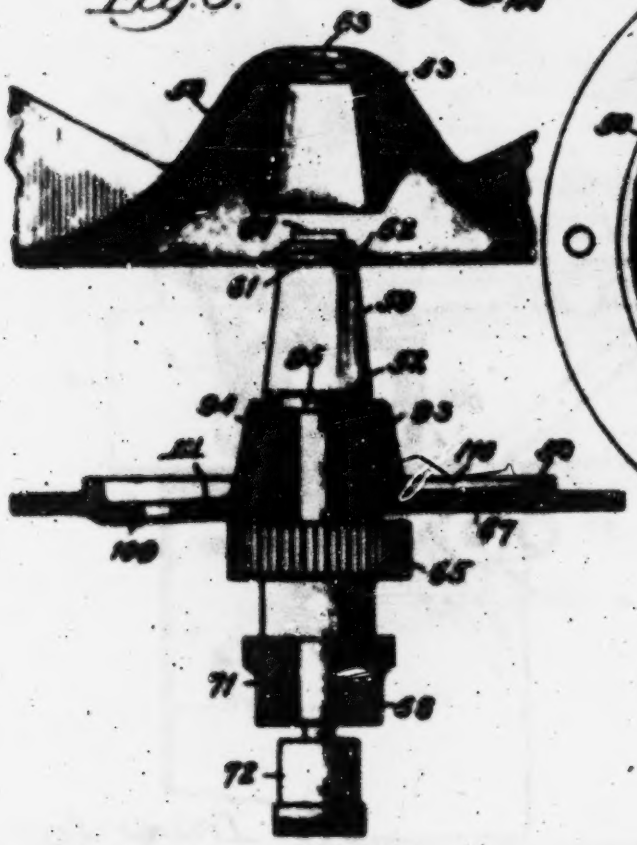


Fig. 5.



Inventor
Howard F. Snyder.
by William R. Lane.

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Patented July 12, 1932

1,866,779

UNITED STATES PATENT OFFICE

HOWARD F. MAYER, OF NEWTON, IOWA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MAYTAG COMPANY, OF NEWTON, IOWA, A CORPORATION OF DELAWARE

WASHING MACHINE

Application filed June 14, 1930. Serial No. 461,151.

The present invention relates to a power driven washing machine and more particularly to the construction of the gyrator or impeller and tub thereof and the gyrator or impeller operating mechanism for such machine.

Among the objects of the invention is to provide a novel construction designed to wash and thoroughly cleanse clothes, fabrics and various similar materials of all kinds. My invention is equally efficient in washing fabrics, and other similar materials of a very delicate nature, that may have become frail and weak owing to aging, wear and otherwise. Among such delicate materials are included fine laces, weftings, veils, fine silks, lace curtains and various other articles. Very often valuable articles, relics, heirlooms and other objects of great value are composed partly or wholly of fine and frail textures, such that they cannot be easily washed when soiled, since their nature would not permit subjecting them to the rigors of the ordinary washing machine operation, or even washing by hand. By my invention, the washing and cleansing of such objects is not only made possible, but practicable, such that most delicate and frail objects can be handled mechanically during the washing operation without marring their character and beauty. By reducing friction on the articles to be washed the life of the article is preserved.

These and the other objects of the invention are attained by so constructing and associating the tub and the gyrator of the washing machine, and so operating the gyrator that the weight of the articles does not interfere with the gyrator, or its action, or with the tub and its co-action with the gyrator. In my invention the gyrator and tub, irrespective of the upper or lower end position of the gyrator therein, so coact that the goods to be cleansed are not only given a definite washing and cleansing movement, but are also maintained, during such movement, in a suspended condition in the liquid, so that the rapid and energetic alternating rotary movements of the gyrator do not interfere with the goods or cause them any injury or damage, while at the same time the goods and the wash water, (or the rinse water, when rinsing), are turbulently swirled or whirled about with a surging and seething movement within the tub. Even in the form of the invention illustrated, wherein the liquid impelling blades are disposed at the bottom of the tub, the action of the agitator on the liquid is to constantly press the clothes upwardly in a swirling formation so that they are maintained in substantial suspension in the liquid above the blades. To this end the tub preferably has a smooth interior not interrupted by flanges or other projections, and preferably has an inclined bottom portion so associated with the gyrator and the remainder of the tub as to cooperate therewith in aid of such action.

One of the principal objects of this invention resides in providing this improved method of and apparatus for cleansing fabrics without bringing them into substantial rubbing contact with the walls of the tub or the liquid agitating mechanism.

As another object of the invention, the gyrator is provided with flanges which, during the alternations thereof, act to successively impart movement to the contents of the tub, such that the resultant direction of movement of the contents in the embodiment illustrated in the drawings is normally radially outward from the central portion of the tub, then upwardly, then inwardly and then downwardly toward the center of the gyrator, and yet at the same time there is a generally rotary progression or movement about the inside of the tub, first in one direction and then in an opposite direction, such movement being in the nature of a gyratory action or movement and appearing to be that of a helix around a ring. In this way the goods or objects undergoing the washing operation are driven about in the tub in devious paths, while at the same time the wash water or cleansing fluid is being vigorously agitated and rigorously moved about the tub in devious paths to sustain the washable materials, whereby they will not be injuriously affected by the gyrator operating or actuating mechanism. This mechanism may be

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readily thrown into and out of operative connection with the gyrator at will.

Still further objects of this invention reside in providing a novel construction of agitator blade; and in further providing resilient means, tending to normally render the gyrator inoperative but yieldable to render the same operative when manually actuated; to provide a combined means for guarding against the accidental contact or interference of the operator with the driving mechanism of the washing machine and maintaining the driving mechanism in effective driving condition, as by constantly maintaining a driving belt taut; and to provide other features having the objects, advantages and capabilities hereinafter more fully appearing.

Due to the construction and arrangement of the tub, gyrator and driving mechanism, this machine provides a decidedly new method of cleaning fabrics, in that while the clothes are washed thoroughly, this is done by the action of the water itself on the materials as distinguished from their being rubbed or drawn through the water by a dolly or other mechanism, or tumbled against the sides of the tub or rubbed against projections on the interior of the tub. In my machine the clothes are driven and swirled about in and by the water in the interior of the smooth tub. The materials never come in any substantial contact with either the tub, or the gyrator which initially causes the agitation, seething and surging of the water on the interior of the tub. The peculiar movement of the water caused by the action of my gyrator in operation largely prevents rubbing the clothes against the container or gyrator and eliminates the deterioration of the materials being washed by it. These and other advantages which I find it difficult to explain because of the unusual movement of the water are possessed by my machine.

By the term gyrator is meant an alternating rotary member operable to effect movements of fluids and materials from the central portion of the member toward its outer edge or borders.

In the drawings illustrating a preferred form of the invention:—

Fig. 1 is a vertical sectional view taken through the washing machine.

Fig. 2 is a horizontal sectional view taken through the tub, showing the gyrator in top plan view.

Fig. 3 is a sectional view showing portions of the operating mechanism.

Fig. 4 is a detail vertical sectional view on an enlarged scale of the bottom of the tub, the gyrator, part of the gyrator operating mechanism and the packing means for the bearing of the gyrator shaft.

Fig. 5 is a detailed sectional view of the driving connection between the gyrator and the driving mechanism therefor.

Fig. 6 is a top plan view of the removable plate at the bottom of the tub, with the gyrator removed.

Referring more particularly to the drawings the washing machine comprises a tub 1 supported upon and fastened to legs 2 having roller casters 3. To the legs 2 is secured a platform 4 upon which is supported a motor 5 bolted to an insulating base piece 6 in turn bolted to the platform 4. The legs 2 have telescopic sections 7 of tubular form slidable in clamp portions, forming part of the legs 2, for the purpose of adjusting the height of the washing machine, the sections 7 being held in adjusted position by means of set screws 8. The motor 5 is connected to the driving mechanism by means of a belt 9 running over a pulley 10 fixed to the motor shaft and a driven pulley 11 fastened to a cross shaft 12 carrying a worm screw 13 in mesh with a worm gear 14 keyed to a vertical shaft 15. The gear mechanism 13–14 is suitably housed in a housing 16 bolted to and forming part of one of the supporting legs of the washing machine.

Between the motor 5 and the gear mechanism 13–14 extends an aluminum belt guard 17 which encases the belt 9 and pulleys 10 and 11, the guard having a flange 18 extending over the upper lap of the belt and the pulley 10. By this means accidental contact with the driving belt 9 and pulleys 10 and 11 is prevented. The guard has a hub portion 19 by which it is pivotally supported upon a part of the shaft 12 between the bearings 20 and 21 formed in the housing 16. To an intermediate part of the guard is fastened a pivot stud 22 upon which is idly and rotatably carried a belt tightener roller 23. It will be noted that this guard is supported only by the shaft 12 and the roller 23 bearing upon the upper lap of the belt 9, so that the guard is capable of an upward and downward swinging movement about the axis of the shaft 12 as the belt becomes taut or slack. The amount of the tautness given the belt, as the roller 23 presses against it, is derived from the combined weight of the guard, with the parts carried by it, and a tension spring 24 connected between and to the guard 17 and the platform 4, the tension of the spring adding to the weight of the guard to maintain the roller 23 in tightening contact with the belt.

In vertical alinement with the shaft 15 is a second shaft 25, rotatably supported in suitable bearings 26 and 27 respectively, forming parts of the crank and gear housings 28 and 29. Said housing 28 is rigidly connected to the tub by means of a bracket 30 and bolts 31 and 32 and includes the top and intermediate members 33 and 34 of the housing 16. The housing 29 is rotatably sup-

ported upon a ledge 35 rigidly bolted to the side of the tub 1 and also made fast to the top of the tub through a bolted bracket 35'. A tube 36 is connected between the members 28 and 29 and houses the shaft 26. The shaft 25 drives a wringer 37 through the medium of clutches 38, 39 and 40, and gears 41, 42 and 43, which may be manually and selectively controlled through the handle 44 for causing the operating of the wringer in any direction desired and in whatever position the wringer may be relative to the tub. The wringer is capable of swinging into different positions with respect to the tub about the axis of the shaft 26, and to be held in any of its positions by a spring pressed locking pin 45 cooperative with recesses in the ledge 35. The details of the mechanism for operating the wringer do not form part of this invention, and therefore, further description thereof is deemed unnecessary.

The tub 1 is preferably substantially square in horizontal cross-section and is shallow with respect to its horizontal dimensions. It has a central bottom portion 46, an inclined portion 48 and vertical side walls 49. It may, however, be of other form than square and the inclined portion 48 may be omitted.

For the purposes of exemplifying my invention, the gyrator or impeller is disclosed and described as mounted on the tub for support. Herein it is shown as projecting upwardly through the bottom of the tub, but it must be evident that all desirable arrangements are within the contemplation of this invention, such, for instance, as the mounting of the impeller so as to depend into the liquid from the upper portion of the tub, thereby bringing about the consequent reversal in the flow of the fluid through the tub. Thus, as modified, the flow will be radially outwardly and thence downwardly, and then inwardly and upwardly toward the center of the gyrator. In the present disclosure the bottom 46 of the tub 1 has a circular opening which is normally closed by a plate 47 bolted to the bottom 46. The radially extending portion 48 at the bottom 46 inclines upwardly toward the vertical side of walls 49 of the tub for a purpose hereafter described. The plate 47 supports the gyrator 51, the packing means for the gyrator shaft 52 and part of the operating mechanism for the gyrator.

The gyrator is metal, or other suitable material, and is of generally circular form when viewed in plan. It comprises an annular, trough-like or dish-shaped portion 54, the central or inner portion of which merges in a continuous concave curve into a central upstanding stem portion 53 which tapers upwardly and terminates in an upper rounded end. The outer peripheral edge of the trough-like portion 54 extends outwardly and upwardly in a concave curve 55 which is continuous with the dished curve of the portion 54. The gyrator is provided with liquid impelling means, one form and arrangement of which is illustrated in the drawings.

Extending in spaced position radially from the central stem or dome 53 are a plurality of flat, vertically projecting blades, wings or flanges 56 of the shape shown in Fig. 4 of the drawings. The projecting surfaces of these blades taper or incline inwardly in a general direction from their outer edges to the trough-like portion of the gyrator. They extend from the outer edge of the upwardly inclined portion 55, across the portion 54, thereof, and thence upwardly vertically along the sides of the central upstanding stem 53 to a point approximately half way up the sides thereof. At this point the blades merge into the upper rounded end of the stem. The remaining or upper part of the stem is free of blades and forms a smooth, continuously flowing curve at the apex 57.

These blades 56 are of substantial height at their outer portions, so as to project well into the cleaning fluid. The blades incline or curve downwardly and inwardly toward the central axis of the agitator, that is, to the sides of the stem where they merge into the stem. As shown in Fig. 4, the blades extend across the dish-shaped member at the lower ends in lobe-shaped form and the upper surfaces of the wings or blades extend considerably above the dish-shaped member to provide sufficient blade surface to impart a considerable force or throw to the water in the direction outwardly and somewhat parallel to the axis of rotation of the gyrator, as hereinbefore described. It is to be noted that the outer inclined portion 55 of the dish-shaped member assists in this movement and that this directional flow is augmented by the inclined walls 46 of the surrounding trough or tub. The force imparted to the water is sufficient to cause the water to flow upwardly toward the top of the tub, as shown in dotted lines, Fig. 1. The downward flow at the upper central portion of the tub prevents the overflow of suds. In the embodiment shown there are four of these blades, but any other number may be used as desired. Within the central stem portion 53 and depending from the apex 57 thereof is a hollow pyramidal socket 58, preferably square in horizontal section. It is adapted to fit upon a square pyramidal block or step 59 cocketed to fit upon the upper end of the shaft 52 and secured to said shaft, to positively rotate therewith, by a cross pin 60 extending transversely through the shaft. At the upper end portion of the step 59 is formed an annular groove 61 in which reposes a spring lock ring 62 adapted, when the gyrator is forcibly moved downwardly upon the step 59, to expand into an annular groove 63 formed in the apex portion 57 of

the gyrator. The uppermost end 64 of the step is squared to fit into a like aperture formed into the apex 57. The lower end of the socket may be provided with notches into which the ends of the cross pin 60 may extend, if desired. The various gyrator portions, namely, the apex, trough, peripheral, blade and pyramidal portions all are preferably integral. While this embodiment illustrates the invention, it is to be understood that the gyrator may be located at the top of the tub and in depending position from the top or cover thereof.

The shaft 58 is fixed to a pinion 66 by means of a key 68, and has bearings 67 and 69 respectively formed in the plate 47 and in a bracket 69 bolted to the underside of the plate 47. These bearings have bushings 70 and 71, preferably of bronze or bronze. The pinion 66 is in thrust bearing with the ends of the bearings 67 and 69, and clamping bolts hold the bracket 69 in place such that the pinion 66 has no loose play, yet it is permitted to freely rotate or oscillate. The lower end of the shaft 58 has a grease cup 72 operative to supply a lubricant through bores 73, 74 and 75 to the bearing surfaces between the shaft 58 and bushings 70 and 71. The bracket has an arm 76 upon which rests and freely slides reciprocating rack 77 adapted to mesh with the drive pinion 66, the other end or crank arm portion 61 of the rack being pivotally connected to a crank pin 78 fixed to crank arms 79 and 80 fastened to the ends of the shafts 15 and 58.

The rack 77 may be thrown into or out of operative engagement or mesh with the pinion 66 at will. This is accomplished by the mechanism shown in Fig. 2. Upon the end of the arm 76 is pivotally supported a bell-crank lever 82 carrying at one of its ends a roller 84 bearing against the rear face of the rack 77 and being apertured at its other end to receive a bent end of a link 85 running to a crank arm 86 having its free end also apertured to receive the other bent end of the link, the link being thus pivotally connected to said lever 82 and arm 86. The arm is fixed to a vertical shaft 87 rotatably supported in bearings 88 and 89 respectively rigidly secured to a leg 3 and the side of the tub 1 (see Figs. 3 and 11). To the upper end of the shaft is secured a handle 90 by which the lever 82, through the media of link 85, arm 86 and shaft 87 may be forced against the rack to cause the latter to engage with the pinion 66. A spring 91 is connected to the end of the rack 77 and a fixed part of the washer, as a leg 3 thereof, for the purpose of automatically disengaging the rack from the pinion and to hold the rack away from the pinion when the handle 90 is shifted to throw the lever 82 out of operation and thus stop the oscillation or rotation of the gyrator. The spring constantly tends to hold the rack away from the pinion and against the roller 84, the rack being thrown into mesh with the pinion only when the lever 82 and roller 84 are moved to positively shift the rack into engagement. The rotation of the crank 79-80 will cause a reciprocation of the rack over the arm 76 whether or not the rack be in engagement with the pinion. When the rack is moved into mesh with the pinion, the latter is caused to alternately rotate and through the medium of shaft 58 impart such movement to the gyrator in the tub.

For the purpose of packing the gyrator shaft 58 the plate 47 and the bracket 69 are provided with communicating chambers adapted to hold a packing material 92, preferably composed of chopped or shredded and comminuted asbestos, graphite and oil. The packing space comprises an annular chamber 93 surrounding the shaft 58 between the bearing 67 and bushing 70, and a washer or packing 94, preferably of leather, in the opening at the top of the chamber 93 and located between the bottom end 95 of the step 59 and the packing material in the chamber 93. The chamber 93 extends through a passage 96 to a plunger chamber 97. The lower portion 98 of the latter has a screw threaded aperture in which operates a screw plunger 99 having at its outer end a winged finger piece 100 which may be manually rotated to feed the plunger into the chamber 97 against the packing 92. The packing 92 is a saturated plastic and is in a sort of fluidal state so that the stress applied to it by the forceful entry of the screw plunger into the chamber 97 will cause the packing 92 to flow through the passage 96 to the chamber 93 and completely fill the space of the latter. In this way compensation for any loss of packing owing to wear, leakage and other wise is readily made. Leakage of wash water or cleansing fluid from the tub around the shaft 58 is prevented by this novel packing means.

The open top of the tub is normally closed by a cover 101 having a hinge 102 at one side and a finger grip piece 103 at the other side.

At one side of the tub is secured a liquid soap dispenser comprising a reservoir 104 fastened to the wall 45 by links 105 and adapted to contain a relatively large supply of soap. To this chamber is connected a measuring pump 106 into the upper portion of which a charge of fluid soap is drawn by the piston on piston rod 107, and upon a downward movement of the piston said rod discharged into the tub through a discharge tube or nozzle 108 so located that the ejected charge will be in the general direction of the movement of the mass of material and cleansing solution within the tub during the washing operation.

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When the agitator is alternately rotated or oscillated, with materials to be cleansed and the cleansing liquid in the tub, the liquid is given a radially outward and upward movement toward the upper part of the tub, then an inward movement, then a downward movement toward the axis of the agitator, the liquid also progressing, in the whirling action, about the tub first in one direction and then in an opposite direction so that the resultant motions are substantially gyratory ones, or helical movements about a ring having a circular cross-section. In this way the washing and cleansing materials are given a turbulent swirling action. As a result of this action imparted to the cleansing liquid by the agitator, the water in turn imparts a similar action to the fabrics. Goods are then whipped, whirled and dashed around in the moving, whirling, turbulent action set up by the agitator. Thus the fabrics are given a quick, snappy, driving, whirling, reversing double action, produced by the agitator, doubling the cleaning but one way and then the other until every thread in the fabric is acted upon an untold number of times, somewhat like the snapping of a whip-lash in all directions. While it is very difficult to describe the action of the water and the movement of the clothes thereby produced by the rapid reciprocation of the agitator or impeller in the container, whereby the materials are thoroughly cleansed while held in suspension by the peculiar and novel movement and action of the water, I believe that the foregoing description will enable those skilled in the art to readily construct and operate my invention and fully obtain the herein disclosed method. At or before the start of the operation, and during the operation of the machine, as desired, charges of liquid soap may be ejected into the moving mass in the tub.

The plate 97 has a drain port 109 with which may be connected a hose normally supported at its free end at one side of the machine but which may be lowered to drain the tub of its contents. The plate 97 is formed with a shallow depression 110 surrounded by the flange 99 and having an inclined bottom 111 extending from one side to the other of the plate 97 and downhill 98, in order to prevent clogged drainage of the fluid in the tub through drain port 109.

It is of course understood that the specific description of elements set forth above may be changed from without departing from the spirit of my invention as set forth in this specification and the appended claims.

Having now described my invention, I claim:

1. The method of cleansing fabrics in a tub containing a washing fluid in such a way as to create positively driven violently flowing currents moving away from and back to the plane of the source of agitation, and also around the tub in one direction in a plane approximately parallel with the plane of agitation and then causing it to move away from and back to the plane of the source of agitation and in a reverse direction in a plane approximately parallel with the plane of agitation so as to vitally and forcibly cause the fabrics in the tub to travel in substantially the same paths as the fluid, thereby causing cleansing of the fabrics by violent rubbing engagement of the fabrics without substantial contact with rubbing surfaces.

2. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller mounted adjacent the bottom of the container, so constructed and arranged that when water and materials to be cleaned are placed in the container and the impeller is reciprocated, the water will first be violently flowed laterally and upwardly in one gyratory direction and thereafter laterally and upwardly in an opposed gyratory direction, so that the materials being cleaned will be suspended by the movement of the water, and the water forced through and around the materials to thoroughly cleanse them, while said materials are substantially out of rubbing contact with the mechanical parts of the machine, and motor-driven means for rapidly driving the impeller.

3. In a washing machine the combination of a tub for containing a cleansing substance and the materials to be cleansed, said tub having an outwardly and upwardly inclined portion, an impeller cooperating with the said inclined portion of the tub to force said cleansing substance and materials to be cleaned outwardly in a direction substantially parallel with said inclined portion, and power means for oscillating said impeller.

4. In a washing machine the combination of a tub adapted to contain wash water and goods to be washed, said tub having a flared portion, a liquid impeller in said tub, having a depressed portion, said liquid impeller cooperating with said flared portion to swirl said wash water and goods with a rotata-

tially gyratory movement, and power means to alternately rotate said liquid impeller.

6. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a liquid impeller mechanism driven by said power means for oscillating said liquid impeller, said liquid impeller having flanges and a radially depressed portion operative to upwardly swirl said cleansing substance and material.

7. In a washing machine comprising a driving power means, the combination of a tub for containing washing and washable materials, a liquid impeller, means operable to alternately rotate said liquid impeller, said liquid impeller being provided with upstanding flanges and a depressed portion on each side of each of said flanges and operative to swirl said materials with a substantially gyratory movement.

8. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a liquid impeller, mechanism driven by said power means for alternately rotating said liquid impeller, said liquid impeller having upwardly and radially extending flanges and a radially depressed surface operative to upwardly swirl said cleansing substance and materials.

9. In a washing machine comprising driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a centrally raised portion and radially depressed portion, and operable to swirl said materials with a substantially gyratory movement.

10. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a centrally raised portion, a radially depressed portion and flanges extending radially from said centrally raised portion, said liquid impeller operable to swirl said materials with a substantially gyratory movement in said tub.

11. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a central radial portion, an inclined peripheral portion and an intermediate trough portion, said liquid impeller operating to swirl said materials with a substantially gyratory movement in said tub.

12. In a washing machine comprising driving power means, the combination of a tub for holding a cleansing fluid and materials to be cleansed, a drain plate at the bottom of said tub and having a sloping bottom portion extending from one side to the other of the center of said tub, and an eccentrically located drainage connection attached to said inclined portion, a shaft extending through said plate and a liquid impeller on said shaft for giving said substance and material turbulent motion.

13. In a washing machine comprising a driving power means, a tub, an alternately rotary liquid impeller having a plate formed with an annular depression, a raised central portion and upstanding flanges in said depression, said plate, depression, central portion and flanges operating on the contents of the tub to give the contents a gyratory movement.

14. An agitating member for a washing machine comprising a cup-shaped disk having a frusto-conical portion rising from the center thereof, the vertical elements of which are concave so that the surface of said portion merges into the surface of said disk, and a round upwardly tapering portion projecting above said frusto-conical portion and terminating in a rounded surface, and narrow radial wings projecting from said latter portion and extending along the sides thereof and across the surface of said disk and having rounded outer edges merging into the concave surface of said disk.

15. An impeller for a washing machine comprising an annular trough, a stem rising centrally from said trough and having a plurality of circumferentially spaced radial wings projecting therefrom and extending along its sides and across the surface of said trough, the top surface of said wings above said trough curving downwardly and inwardly.

16. A rotatable impeller for a washing machine adapted to be disposed in a liquid containing receptacle comprising a dish-shaped member having a central upstanding tapered stem with a rounded upper end, ribs extending across said dish and upwardly along the side of said stem and having rounded upper edges merging into the rounded surface of said stem.

17. In a washing machine, a tub for containing wash water and goods to be washed, an oscillatory dish-like agitator in said tub near the bottom thereof and having a plurality of upstanding water-impelling projections extending from one face thereof, said projections being of substantial height contiguous to the periphery of the agitator and decreasing in height toward the center thereof, side faces of substantial area are provided and while the agitator is oscillated the water and goods will be vigorously forced laterally upwardly in gyratory paths to violently force the water through, between and around the goods and thoroughly cleanse them while

they are sustained in the water free from any substantial contact with rubbing surfaces, and motor-driven means for oscillating the agitator.

18. In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator consisting of a substantially disk-like imperforate body and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator, leaving the central portion of said body free of water impelling projections.

19. In a washing machine, a tub having side walls and a bottom, a driving shaft extending through said bottom into the tub, an agitator fixed to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular base having an upstanding central portion, blades extending upwardly from the upper face of said base, the blades being of greatest height adjacent the marginal edge of the base, decreasing in height toward the center and merging into said upstanding central portion, the union between the agitator and the shaft permitting removal of the former from the latter by an upward movement, the oscillation of the agitator causing the blades to set up violent movements of the fluid and tub contents outwardly away from the agitator, upwardly, inwardly and then back toward the agitator, there also being superposed on this circulatory movement a movement of the fluid and tub contents first in one direction circumferentially of the tub and then in the other, so that the articles being washed will be thoroughly cleansed without any material rubbing of the blades thereagainst.

20. In a washing machine, a tub, a driving shaft extending into the tub, an agitator secured to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular body portion having blades extending therefrom on the face presented to the material being washed, the blades adjacent the marginal edge of the body portion being of a substantial dimension in a direction at right angles to the body portion, said body portion being free of any holes or openings of substantial dimensions, said blades and adjacent portions of the body portion of the agitator when the agitator is oscillated throwing the fluid in the tub, and material being washed, violently outwardly from the edge of the agitator whereby it will flow in circulatory paths away from the agitator, along the sides of the tub, then inwardly and back toward the agitator, this cycle being continuously repeated.

21. In a washing machine, a tub having a substantially uninterrupted inner surface and adapted to contain cleansing liquid and materials to be washed, the bottom of the tub merging smoothly into the sides, an oscillatory liquid impeller mounted adjacent the bottom of the tub, having on its upper surface upstanding wing-like means of substantial height and length so constructed and arranged that when the impeller is given a rapid rotary oscillatory movement the cleansing liquid and materials to be washed will be violently forced laterally from the impeller then upwardly along the side of the tub, then away from the tub side and back toward the impeller, this cycle being continuously repeated to force the cleansing liquid through and around the materials to be washed to thoroughly cleanse them while they are substantially out of rubbing contact with the impeller, and motor-driven means for imparting to said impeller a rapid rotary oscillatory movement.

22. A washing machine comprising in combination, a tub for containing cleansing liquid and materials to be cleansed, said tub having a bottom portion, and an upwardly extending wall portion the interior surface of which is free from rubbing projections, the juncture of the bottom portion with the upwardly extending portion being inclined to facilitate the movement of currents outwardly and upwardly and along the interior surface of the tub, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, the upper surface area of which is considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said impeller being spaced a substantial distance away from the upwardly extending portion of the tub, a rotary reciprocatory drive shaft extending upwardly through the bottom of the tub into the interior thereof, the impeller being mounted upon said shaft for movement therewith in a fixed plane, said impeller having on its upper surface a plurality of upstanding wing-like blades, each of which is of substantial height and length, and provided with lateral impelling faces of substantial area, the impeller and tub being so constructed and arranged relative to each other as to cooperate while the impeller is reciprocated for whipping the fluid and violently forcing it first in one and then in an oppositely upward circulatory direction against the interior of the tub and through and around the materials being washed, and substantially suspending the materials in the fluid by the moving fluid, and means for imparting a rapid rotary reciprocatory motion to the said shaft and impeller.

23. A washing machine comprising in combination, a tub for containing cleansing liquid and materials to be cleansed, said tub hav-

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ing a bottom portion and an upwardly extending wall portion, the interior surface of which is free from rubbing projections, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, having a base and a plurality of blades, each of which is of substantial height and lateral area, and a central portion projecting upwardly from the base, the upper surface area of the base being considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said base being spaced a substantial distance away from the upwardly extending portion of the tub, said tub and impeller being so constructed and positioned relative to each other that, when the impeller is rapidly reciprocated each blade and its adjacent portion of the impeller base will simultaneously drive the circulating fluid in one and then an opposite outward upward circulatory direction, toward and against the clothes, and set in operation with the interior of the tub to cause violently opposed currents of fluid to meet and flow inwardly and in a general vertical direction toward the impeller, whereby the materials are substantially suspended in the fluid and cleansed while thus suspended, a rotary reciprocating drive shaft extending upwardly through the bottom of the tub into the interior thereof for supporting the impeller for movement in a fluid plane, and power means for rapidly reciprocating the shaft and impeller for the purposes set forth.

35. In a washing machine, a tub adapted to contain a washing fluid and materials to be cleaned, a rotary reciprocatory driving shaft extending through the bottom of the tub at the center thereof, a liquid impeller mounted on said shaft near the bottom of the tub, the outer portion of the impeller being spaced a considerable distance from the interior side surface of the tub and rotatively reciprocatory with the shaft, said impeller comprising a base, a central portion projecting upwardly therefrom and a plurality of uniformly spaced and extended rubbing blades projecting upwardly from the base and radially spaced and extended radially from the central portion, each blade being of greater area at a position contiguous to the edge of the base than at the outer thereof, and means for imparting rotary reciprocatory motion to said shaft and the impeller thereon, the impeller and the tub being so constructed and relatively positioned as to cooperate while the impeller is operated to cause the liquid to be violently moved laterally and upwardly against and in one direction, circumferentially around the inner surface of the tub, and laterally and upwardly against and in an opposite direction, circumferentially around the inner surface of the tub whereby the materials will be thoroughly cleansed while substantially suspended in the water.

36. A washing machine comprising in combination, a tub, said tub having a main body portion, the interior of which is substantially free of scrubbing projections, and a bottom portion, a rotary reciprocatory liquid impeller mounted for operation in a fluid plane in the tub, the outer portion of which is spaced a considerable distance from the body portion of the tub and having a plurality of blades projecting therefrom, said tub and impeller being so constructed and positioned relative to each other that when the impeller is rapidly reciprocated each blade and its adjacent portion of the impeller base will simultaneously drive the circulating fluid in one and then an opposite outward circulatory direction away from the plane of the impeller through and around the clothes, and set in cooperation with the interior of the tub to cause violently opposed currents of fluid to meet and flow inwardly and in a general vertical direction toward the impeller, whereby the materials are substantially suspended in the fluid and cleansed while thus suspended, a driving shaft extending into the tub on which the impeller is mounted for movement therewith, and power means for rapidly reciprocating the shaft and impeller.

37. In a washing machine for cleaning fabrics by forcing cleaning fluid through them while substantially suspended by the action of the fluid, as distinguished from pulling or pushing the fabrics through the fluid or against scrubbing surfaces, or otherwise scrubbing them by mechanical means, a tub, a substantially imperforate rotary reciprocatory impeller mounted to operate in a fluid plane having blades of substantial height and area projecting therefrom in a direction toward the fabrics while they are being cleaned, said tub and impeller being so constructed and arranged as to cooperate while the impeller is in operation for whipping the fluid and violently forcing it outwardly, upwardly and in a general vertical and circulatory movement and circumferentially of the tub first in one and then in an opposite direction and through and around the materials and substantially suspending the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller.

38. A washing machine comprising in combination, a tub having an inner surface free from rubbing projections, said tub having a vertical portion and a bottom portion inclined outwardly and upwardly toward and merging with the vertical portion, an imperforate rotary reciprocatory impeller mounted for operation in a fixed plane near the bottom of the tub, the outer portion of which is spaced a considerable distance from the interior of the vertical portion of the tub, said impeller comprising a base of substantial area, a plurality of uniform radially dis-

pond and equally spaced blades projecting upwardly at substantially right angles from the base, each blade being of substantial height and lateral area, and a central portion projecting upwardly from the base, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, and means mounted beneath the tub for imparting to the shaft and impeller a rapid rotary reciprocatory motion.

28. In a washing machine, a tub having a substantially smooth inner surface free from rubbing projections, adapted to contain cleansing liquid and materials to be cleaned, said tub having a vertical portion and a portion inclined downwardly and inwardly from the vertical portion and merging therewith, an imperforate rotary reciprocatory impeller mounted near the bottom of the tub, the outer portion of which is spaced a considerable distance from the interior of the vertical portion of the tub, comprising a base of substantial area and a plurality of uniform equally spaced, radially disposed blades projecting upwardly from the base, each blade being of substantial height and lateral area at its outer end and decreasing in its lateral area toward its inner end, and a central portion projecting upwardly from the base into which the inner end of each of said blades merges, a driving shaft extending through the bottom of the tub on which the impeller is mounted for movement therewith, and means mounted beneath the tub for imparting to said shaft and impeller a rapid rotary reciprocatory motion.

29. In a washing machine, a tub adapted to contain cleansing liquid and materials to be cleaned, a rotary reciprocatory impeller mounted adjacent the bottom of the tub, comprising a substantially imperforate base of substantial area and blades of substantial height and lateral area projecting from the body of the impeller toward the materials while being washed, said impeller and tub being so constructed and arranged that they will cooperate, when the impeller is rapidly reciprocated, to cause the liquid to be positively forced outwardly, upwardly and circumferentially along the interior of the tub in one general direction, and then outwardly, upwardly and circumferentially along the tub in the opposite general direction, whereby the materials being washed will be cleansed, the change in direction of movement of the impeller being accomplished suddenly and forcibly to whip the liquid and vigorously force it first in one direction and then in the opposite direction through and around the materials while substantially suspended therein by the action of the liquid, and power means for rapidly reciprocating the impeller.

30. In a washing machine, a tub having its bottom merging smoothly into its side portion to facilitate the movement of laterally upright circulatory currents, and having the interior of its side portion substantially smooth and free from rubbing elements, for containing a cleansing fluid and materials to be cleansed, a rotary reciprocatory impeller mounted near the bottom of the tub, said tub and impeller being so constructed and arranged as to cooperate while the impeller is in operation, for whipping the fluid and violently forcing it first in one and then in an opposite laterally upward circulatory general direction against the interior of the tub and through and around the materials, and suspending the materials in the fluid by the moving fluid while being washed, said impeller comprising a substantially imperforate base and blades of substantial height and area projecting upwardly therefrom, and motor driven means extending through the bottom of the tub for imparting to the impeller a rapid rotary reciprocatory motion, substantially as described.

31. In a washing machine, a tub having a substantially smooth interior free from rubbing elements for containing a cleansing fluid and materials to be cleansed, a rotary reciprocatory impeller mounted near the bottom of the tub, said tub and impeller being so constructed and arranged as to cooperate while the impeller is operated for violently forcing the fluid first in one and then in an opposite outwardly and upwardly circulatory general direction against the interior of the tub and through and around the materials, and substantially suspending the materials in the fluid while being washed, said impeller comprising a substantially imperforate base and blades of substantial height and area projecting upwardly therefrom, and motor driven means extending through the bottom of the tub for imparting to the impeller a rapid rotary reciprocatory motion.

32. In a washing machine for cleansing fabrics by forcing cleansing fluids through them while substantially suspended by the action of the fluid as distinguished from pulling or pushing fabrics through fluids or against scrubbing surfaces or otherwise scrubbing them by mechanical means, a tub, a rotary reciprocatory impeller mounted for normal operation in a fixed plane, said tub and impeller being so constructed and arranged to cooperate while the impeller is in operation for whipping the fluid and violently forcing it first in one and then in an opposite outward, axial and circulatory general direction against and approximately parallel to the interior of the tub and through and around the materials and substantially suspending the materials in the fluid while being washed, said impeller comprising an imperforate base and blades of substantial height and area projecting therefrom in a direction toward the materials being cleansed, and power

means for rapidly reciprocating the impeller.

23. In a washing machine, a tub substantially free from scrubbing projections for containing a cleansing fluid and materials to be cleansed, a rotary reciprocatory impeller mounted near the bottom of the tub, said impeller comprising an imperforate base and blades of substantial height and area projecting upwardly therefrom, said tub and impeller being so constructed and arranged as to act in cooperation while the impeller is operated for whipping the fluid and violently forcing it first in one and then in an opposite outwardly upwardly circulatory general direction, against the interior of the tub and toward and through the materials, and substantially suspending the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller.

24. In a washing machine, a tub whose interior is free from substantial scrubbing elements adapted to contain a cleansing fluid and materials to be cleansed, a driving shaft extending into the tub through the bottom thereof, an impeller on said shaft to oscillate therewith, power means for oscillating said shaft and impeller, the impeller comprising an imperforate body portion, and blades extending from said body portion on the face presented to the materials being cleansed, the blades being of a substantial dimension in a direction at right angles to the body portion, said tub, blades and adjacent portions of the body portion of the impeller being so constructed and arranged in the tub relative to its interior that when the impeller is oscillated the fluid in the tub will be thrown violently outward against and around the interior of the tub, from the edge of the impeller, first in one and then in the opposite general direction, whereby the fluid will be driven in circulatory paths away from the impeller, along the sides of the tub in opposed directions, then inwardly and toward the impeller, this cycle being continuously repeated while the materials are substantially suspended by the fluid and out of substantial scrubbing contact with the impeller or tub.

25. A washing machine comprising in combination, a tub for containing watered goods to be washed, said tub being substantially free from rubbing projections, a rotary reciprocatory impeller in the tub having flange-like means extending therefrom of substantial height and lateral area, said tub and impeller, together with its flange-like means, being so constructed, proportioned and arranged with respect to each other that while the impeller is in operation the fluid will be vigorously moved about in devious paths within the tub, and the resultant general direction of the movement of the cleansing fluid and the materials to be cleansed is normally radially outward from the central portion of the tub, then vertically, and a general rotary progression about the inside of the tub first in one and then an opposite direction, and then inwardly toward the impeller whereby the fabrics will be cleansed while substantially sustained by the action of the fluid, and will be freely and continuously driven about in the fluid by the movements thereof in a turbulent manner, and in devious paths, and motor driven means for rapidly reciprocating the impeller for the purposes set forth.

26. In a washing machine, a tub free of scrubbing elements for containing a cleansing fluid and materials to be cleansed, an imperforate rotary reciprocatory impeller, blades on the impeller, said tub and impeller together with its blades being so constructed and arranged with respect to each other that while the impeller is in operation the fluid will be vigorously moved about in devious paths within the tub, and the resultant general direction of the movement of the cleansing fluid is normally radially outward from the central portion of the tub, then vertically and in a general rotary progression about the inside of the tub, first in one and then in an opposite direction, and then inwardly toward the impeller, whereby the fabrics will be cleansed while substantially sustained by the action of the fluid and will be freely and continuously driven about in the fluid by the movements of the fluid in a turbulent manner and in devious paths, and power means for imparting reciprocations to the impeller.

27. In a washing machine, a tub for containing fluid and materials to be cleansed, a rotary reciprocatory impeller mounted for oscillation in a substantially fixed plane having a substantially imperforate base and a plurality of blades, said tub and impeller being so constructed and positioned relative to each other that when the impeller is rapidly reciprocated each blade and its adjacent portion of the impeller base will simultaneously drive the cleansing fluid in one and then an opposite outward, upward, circulatory direction and act in cooperation with the interior of the tub to cause violently opposed currents of fluid to meet and flow inwardly and downwardly toward the central portion of the tub and substantially suspend the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller.

28. The method of washing fabrics by forcing cleansing liquid through and around them while substantially suspended by the action of the fluid, as distinguished from rubbing fabrics through the fluid against rubbing corrugations, or otherwise scrubbing them by mechanical means, comprising immersing the fabrics in a washing fluid in a confined zone, then vigorously and rapidly impelling the washing fluid in one and then in an opposite outward circulatory direction away from the plane of the source of impel-

sion and through the fabrics and circumferentially along the interior of the container in rapid succession, and causing these violently opposed currents of fluid to meet and flow inwardly and toward the central portion of the container, and toward the source of impulsion thereby substantially suspending the fabrics in the fluid and cleansing them while thus suspended.

39. The method of washing fabrics by forcing cleansing fluid through them while substantially suspended by the action of the fluid, as distinguished from pulling fabrics through the fluid against scrubbing corrugations, or otherwise scrubbing them by mechanical means, comprising immersing the fabrics in a washing fluid in a container, then vigorously agitating the washing fluid and rapidly forcing it toward the fabrics and away from the plane of the source of agitation vertically along the interior surface of the container first in one and then in an opposite circumferential direction, back and forth through and around the fabrics, and causing the violently moving opposed currents of liquid to meet and flow inwardly and vertically toward the source of agitation whereby the fabrics are caused to be freely moved about by the action of the fluid and cleansed while thus moved.

In witness whereof, I hereunto subscribe my name to this specification.

HOWARD F. SNYDER.

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CONTENTS:

1. [illegible]		30. Supplemental Affid't	Mar 1, 1932
2. Petition	July 18, 1922	2. Letter to Draftsman	Mar 18, 1932
3. Amend't A.	Oct 19, 1922	29. REJECTION	MAR 24 1937
4. Petition	Nov. 22, 1922	29. Amend't L.	MAR 31 1932
5. Amend't B.	Aug 30, 1923	30. Amend't M.	APR 12 1932
6. Petition	Oct. 2, 1923	31. Amend't O	MAY 13 1932
7. Amend't C + Affid't	July 24, 1924	32. Examiner's Amend't P.	June 11, 1932
8. Petition	July 28, 1924	33.	
9. Amend't D	June 10, 1925	34.	
10. Amend't E.	June 10, 1925	35.	
11. Petition	June 16, 1925	36.	
12. [illegible]	Feb. 19, 1926	37.	
13. Amend't F	June 15, 1926	38.	
14. Amend't G +	June 26, 1926	39.	
15. Amend't H	July 20, 1926	40.	
16. Petition	July 23, 1926	41.	
17. Letter to Amend't	July 30 1926	42.	
18. Amend't H	Aug. 9 1926	43.	
19. [illegible]		44.	
20. Letter	Oct 1, 1926	45.	
21. Amend't I.	June 15, 1929	46.	
22. Letter asking etc	Mar 1 1928	47.	
23. Letter		48.	
24. Memo		49.	
25. Amend't K.	June 26, 1931	50.	

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William Cooper.
Washing Machine

No. 83,764. Patented Nov 3 1868

Fig 1.

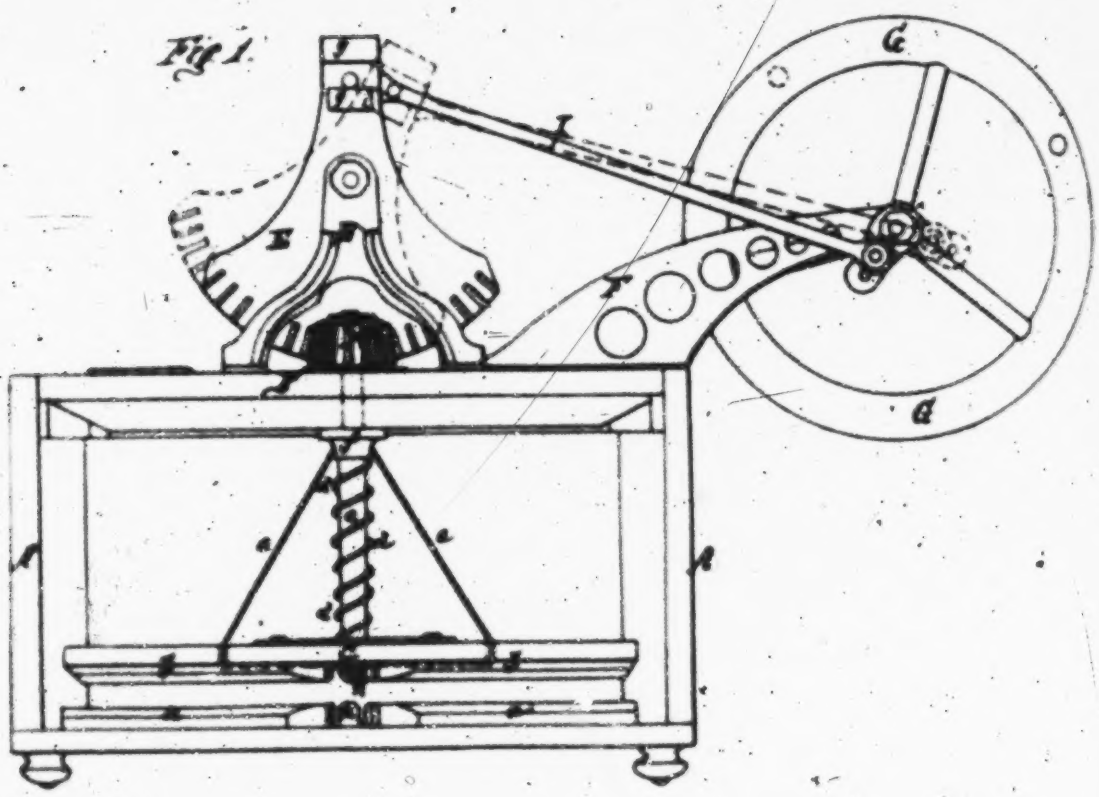
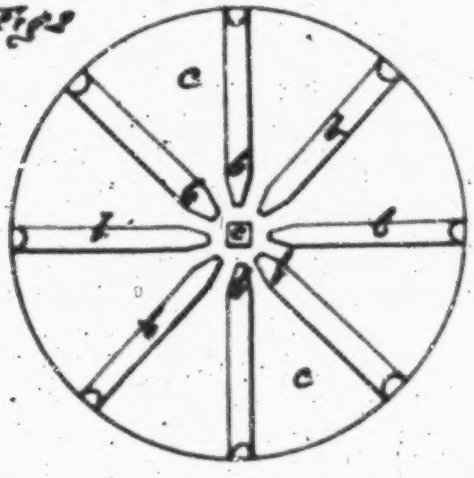


Fig 2



Witnesses

Inventor
William Cooper
per Alexander Wilson
Atty

United States Patent Office.

WILLIAM COOPER, OF GALESBURG, ILLINOIS.

Letters Patent No. 83,764, *dated November* 3, 1868.

IMPROVED WASHING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM COOPER, of Galesburg, in the county of Knox, and in the State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and general arrangement of a washing-machine, to be operated either by means of a lever or a balance-wheel, as may be desired.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, referring to the annexed drawings, which form a part of this specification, and in which—

Figure 1 is a side section, and

Figure 2, a bottom view of the circular movable board.

A represents a square box, made of any size and material desired, and having a hinged lid or cover, B.

Inside of said box is the rubber, formed by wooden cleats *a a*, fastened in circular form to the bottom thereof, and on which works a circular board, C, with cleats *b b* corresponding to those on the bottom, as shown in fig. 2.

The circular board C is attached to a shaft, *c*, by means of a small chain, *e e*, passing through a hole in said shaft, the ends of the chain being fastened to the board, to which is also attached a spiral spring, *d*, which is placed around the shaft *c*, and against a collar, *f*, on said shaft, so that the board C will always be pressed down on the clothes, but still have opportunity to accommodate itself to their movements on the cleats in the bottom of the box.

The shaft *c* passes through the lid or cover B, and at its upper end is a bevelled pinion, H, which is driven by a segment, E, of a cog-wheel, this being pivoted in an iron frame, D, to the lid.

The segment E has two loops, *g g*, for a lever, one near the centre, and the other near the top. There is also attached to it a pitman, I, and crank-wheel G, which are removable, and thus enables the machine to be worked by either lever or crank.

I am aware that the several parts of the above-described invention, taken separately, are not new.

What I claim, is—

The arrangement of the box A, its bottom ribs, *a*, the board C, with ribs *b*, shaft *c*, spring *d*, cog H, segment E, pitman I, plate F, and balance-wheel G, all constructed and operated as herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand, this 9th day of June, 1868.

WM. COOPER.

Witnesses:

A. N. MARR,

LEOPOLD EVERT.

DEFENDANT'S EXHIBIT W

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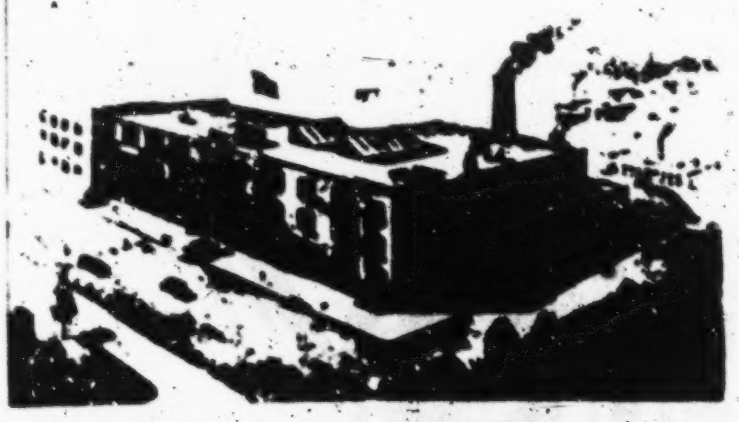

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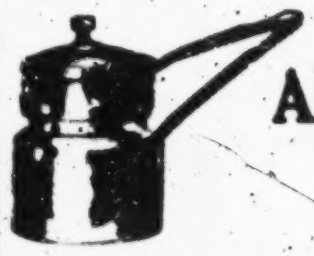
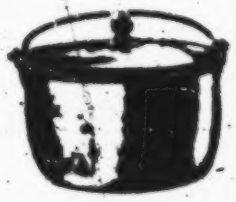


AMERICAN ALUMINUM WARE CO.

Manufacturers
NEWARK, N. J.



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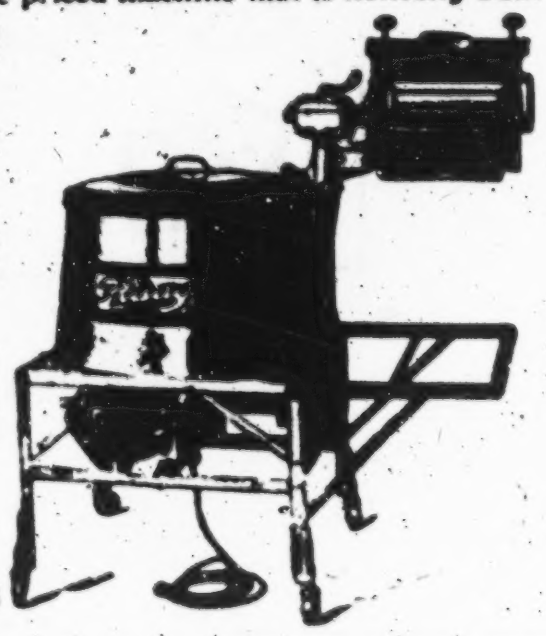

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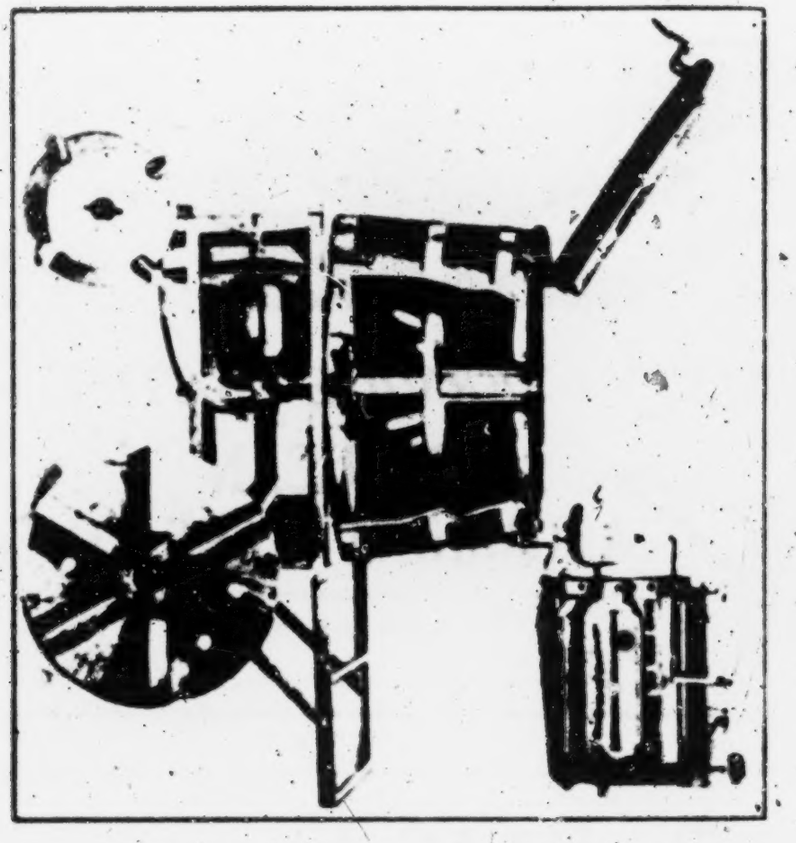
DEFENDANT'S EXHIBIT X



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WASHER

"NUWAY" FACTS AND FEATURES

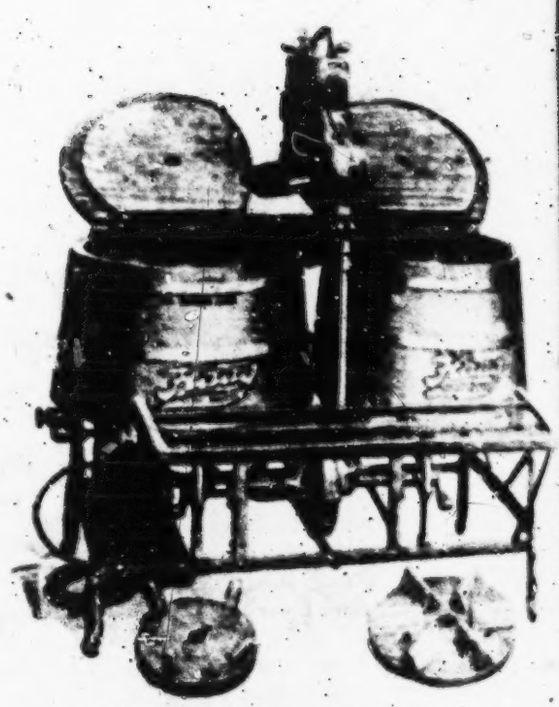
The agitators automatically adjust themselves to the number of pieces to be washed. The tubs are extra heavy, having corrugated sides and bottom, which provides an additional important cleansing feature. HAAG tubs will outlast two ordinary tubs. The lids are light and easy to lift, as there is no heavy mechanism attached to them.

The underneath drive places all mechanism, which is enclosed and thoroughly protected, out of the way, and reduces wear and tear to a minimum on account of the short direct drive. All gearings are heavily galvanized, and there is no danger of leakage. The frame work is built of extra heavy, non-rusting angle steel. In fact the very best of materials are used thruout.

The wringer, which is one of the best made, swings to any position, and can be operated from either tub or baskets. Simply lock it in the most convenient position. Clothes may be run thru from either side of the wringer. It is reversible. It runs independent of the tubs, and may be operated while the clothes are being washed in the tub. The lever on top of wringer is for instant release for the rolls when the clothes become knotted or bunched. All that is necessary is to press the lever and the pressure is immediately taken from the rolls.

All gears are completely covered on both the washer and the wringer, which insures absolute safety to fingers and clothes.

It is either a 1/4 electric motor, or with flat belt for gasoline power drive.



The NUWAY TWIN has both tubs equipped with complete washing mechanism. After washing a tub full of soiled clothes in the warm suds in one tub, put the wringer between the tubs and run them into the hot suds in the second tub. Then put second lot of soiled clothes into first tub, **lower lids and set both tubs to work.** Then when you are ready to wring the clothes which are in the second tub into the rinse water and put a load of clothes from the first tub into the second, start each tub's clothes in the wringer. While the clothes are being washed in the second tub, you can wring by power from the suds into the bluing water or hand feed and handle the second lot of clothes while the others are thoroughly washed. No drudgery—no waiting—no part of the washing—these things done away with.

The simplest, safest, most complete washing machine on the market is a HAAG NUWAY.

DEFENDANT'S EXHIBIT Z

1297

LUTHY & CO. PEORIA, ILL.

Haag Twin Washer

MAKES WASHING A TASK OF AN HOUR

Does Double the Work and Gets the Washing Done in Half the Time Required by an Ordinary Single Washer.

Unequaled for simplicity, convenience, durability and safety.

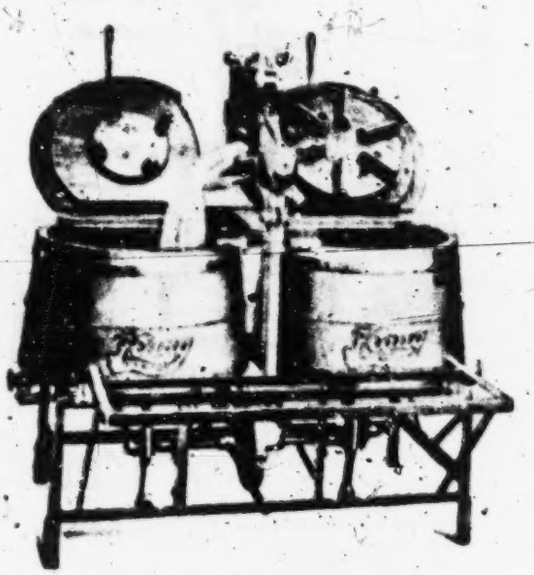
It is the time and labor saved that counts.

WHY NOT GAIN TIME—SAVE SPACE—CUT COST AND REDUCE WORK?

TWO CONTROLS—An unusual feature of the HAAG TWIN WASHER is the fact that the washing mechanism is stopped or set in motion either automatically, by raising or closing the lids, or by means of levers at each end of the machine, which regulate the tubs separately. Thus, when the operator wishes to use but one tub the other can be stopped without having the lid thrown open, in the way, or, if, for any reason, the operator is interrupted and wishes to resume washing later, one or both the tubs can be stopped and the lids remain closed, in this way retaining the heat in the water.

The wringer revolves completely around—may be swung entirely over top of tubs in either direction most convenient for operator, and locked firmly at any desired position. Wide, reversible drain board absolutely prevents sloppy floors while wringing.

THE HAAG TWIN WASHER DOES NOT HAVE A LOT OF MACHINERY ON TOP OF TUBS—wearing and racking them to pieces, allowing dirty, greasy oil to drip in onto the clothes when the lids are raised—but the mechanism on top of tubs is of the simplest design, small and neat in construction and so arranged that it is impossible for the operator to become caught or injured in any way. The slight weight of these castings makes it easy for the operator to raise the lid.

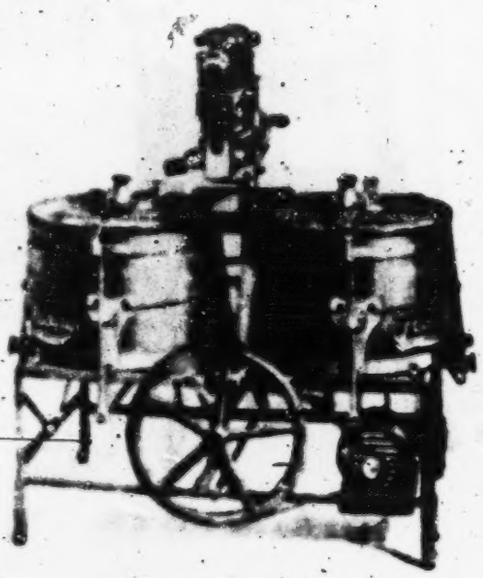


All the splendid features described on page 32, viz. the extra heavy tub, special type of motor, and 11-inch wringer with special locking device and reversible drain board, together with the exclusive features used only on this machine makes the Haag Twin Washer the most desirable on the market.

Size of machine, with extension rack folded, is 26 inches by 52 inches, so that it occupies but little space when not in use. Folding extension rack is 13 inches wide and perfectly supports rinse tub and basket.

Its unsurpassed convenience makes the "Haag Twin Washer" the first choice of every woman and does away with the dread of washday.

When ordering washers please specify whether for engine or motor drive, and if for motor, advise as to the current and voltage to be used.



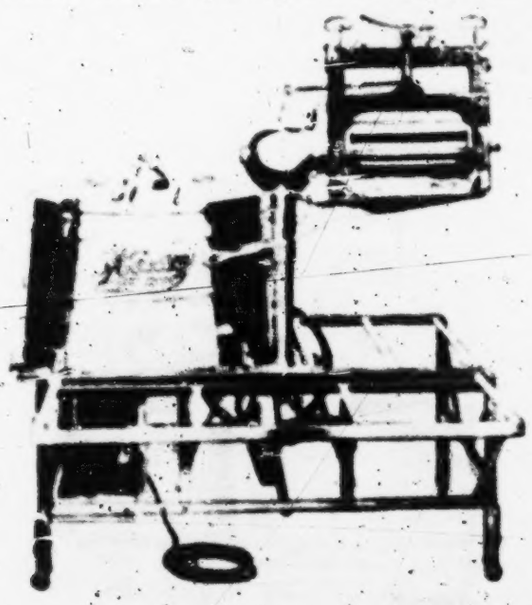
	Price
Haag Twin Steel Bench, engine drive	
Haag Twin Steel Bench, motor and attachments	
Ideal Steel Bench, engine drive	
Ideal Steel Bench, motor and attachments	
Blue Ribbon Steel Bench, engine drive	
Blue Ribbon Steel Bench, motor and attachments	
Blue Ribbon Stave Leg, engine drive	
Blue Ribbon Stave Leg, motor and attachments	
Nuway Steel Bench, copper tub, engine drive	
Nuway Steel Bench, copper tub, motor and attachments	
Nuway Steel Bench (short), wood tub, engine drive	
Nuway Steel Bench (short), wood tub, motor and atchmts.	
Nuway Steel Bench (long), wood tub, engine drive	
Nuway Steel Bench (long), wood tub, motor and atchmts.	
Haag Cabinet Electric, motor and attachments	

1298

ILLUTHY & CO. PEORIA, ILL.

Ideal Washer

Power Washer Quality is Power Washer Economy A Machine that will Never Disappoint You



THE IDEAL BENCH WASHER is built with the most careful attention to details. Perfection of parts is essential for a perfect washer and no item that will in any way add to the convenience, durability or service of this machine has been overlooked. The material used is the best. The work is done by experts. The mechanical construction is unequalled. It is in every respect, a finished piece of workmanship.

Every lever used in operating machine is located in the most accessible position. It is easy to operate and has no complicated system of gears and levers to master. Lever at side of platform throws entire machine in or out of gear. Lever on top of wringer within quick reach of hand—reverses or stops the rolls. Raising the lid throws the dolly out of gear so it does not move. Lowering lid starts it automatically and the machine proceeds with its work.

THE SIZE OF THE MACHINE with extension rack folded is 26 x 46 inches. Width of extension rack is 18 inches. It is a compact and convenient machine and occupies no more space when not in use than the regular two tub machine, although it can be used as a two, three or four tub washer as desired. Has capacity of from eight to ten bed sheets, this being about 25 per cent greater capacity than ordinary washing machine.

The Ideal Washer can be equipped with motor or belt pulley so it can be operated with engine.

Blue Ribbon Washer

The BLUE RIBBON is the only [illegible] made with folding extension rack attached to machine. The rack folds back against the tub when not in use, and is a convenience that is needless to recommend. It speaks for itself.

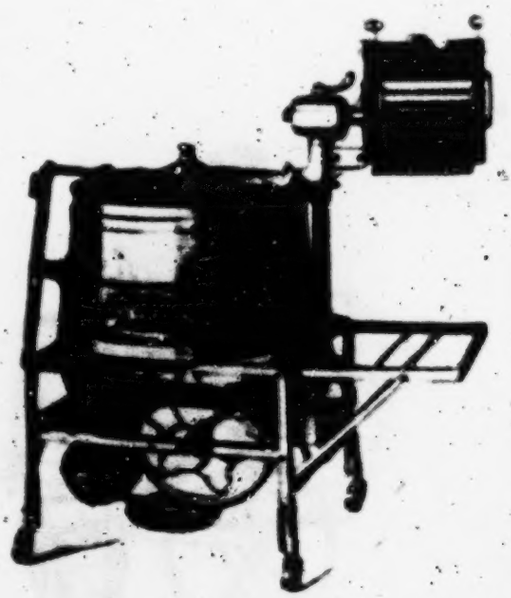
The BLUE RIBBON is also furnished with steel trough (folding) similar to that used on the Nu-way Short Bent.

The heavy tub is also a feature found on no other stave leg machine. The legs are a continuation of the staves which means a substantial and durable machine. No loose or wobbly legs.

The BLUE RIBBON has all the gearing, entirely closed—like that of the finest autos—making it absolutely impossible for anything to get caught in the gears. This tight case permits you to run the gears in a continuous bath of oil, which feeds the bearings and doubles the wear you get out of your washer, also helps to make it an unusually noiseless machine. The use of oil cups enables you to oil the shaftings freely, without any danger of the oil dripping onto the floor or getting onto the clothing, as is the case where only the ordinary oil hole is used.

Furnished with either of both peg and flat type of agitator.

A particularly attractive feature of the electric machines is the fact that both the motor and the drive wheel are entirely under the tub, well out of the way, the wheel being guarded so there is no possibility of the operator's clothing becoming entangled.



Revolving Wringer

This wringer is a labor-saving convenience that appeals to every housewife and is a faultless piece of workmanship. The patent locking device (see picture) is unequalled and holds the wringer as firm as though stationary. It has no rod stopping plates but moves back and forth any distance and can be locked securely so that it is always at just the right place over the tubs to make the water drain into the tub instead of onto the floor. Runs away with clappers. Every part is accurately machined and perfect fitting. The swinging arm extends entirely across under the wringer, supporting it perfectly and making it unusually strong. In fact, the weight of the heaviest man can be sustained on the end of this wringer without straining or damaging it in any way. This is a feature that cannot be applied to any other revolving wringer on the market. Wringer operates in either direction and is controlled by lever on top. Hand crank is furnished for use in emergency. DO NOT OVERLOOK THE FACT THAT THIS IS A 11 INCH WRINGER. This is one inch wider than the wringers customarily used and adds greatly to the appearance and convenience of the machine.

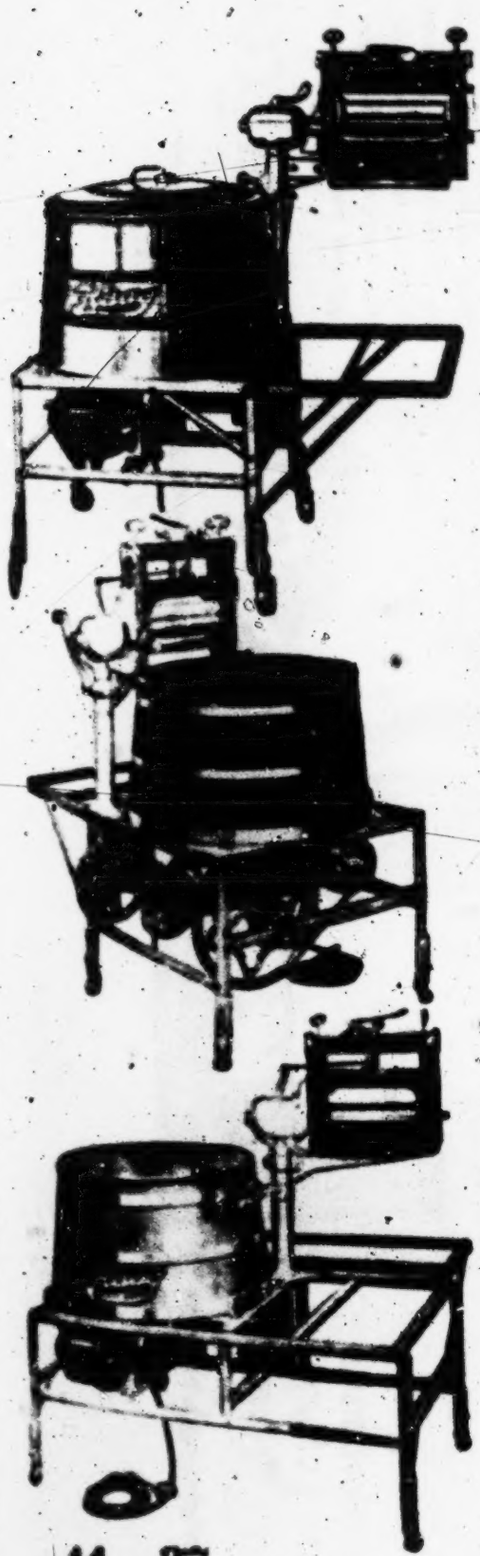
For price see page 33

1299*

L. LUTHY & CO. PEORIA, ILL.

NU-WAY WASHER

Copper Tub or Wood Tub – Equipped with Peg and Flat Agitators



"Haag Nu-Way" (Copper Tub)
Model 20-E

Here is the most modern of all "Dolly" type washers—a glistening full copper tub—an attractive addition to any laundry equipment. Appreciated by housewives because of its cleanliness and the ease with which it is kept bright and new by merely dusting with a cloth. Appreciated, too, for its washing speed and thoroughness. Tinned inside prevents rust. Its smooth interior never snags or tears clothes. The "Haag Nu-Way" COPPER Tub Washer has ALL the advantages shown in our circular. A washer you will be proud to own and show to your friends.

"Haag Nu-Way" (Wood Tub)
Model 30-E

Neat, compact and attractive. Tub finished in natural wood color; all castings aluminum bronze finish. Folding tub rest permits storing this style in a small space when not in use. An easy lift for clothes and water, drains itself without tipping, especially adapted for small laundry rooms and homes where the washer must not occupy much space. The total absence of mechanism on the lid permits the top of the washer to be used for storage, between wash days.

"Haag Nu-Way" (Wood Tub)
Model 20-E

Mechanically the same construction as all "Haag Nu-Ways" except with full length permanent platform for rinse tub and folding basket rest. Note particularly the strong angle iron frame and sturdy construction in the full swinging wringer assembly. In the "Haag Nu-Way" with double tub platform (as do all "Nu-Way" washers) the name "Haag" is an unfailing guide to a long lasting, satisfaction-giving washer — for every one must back up our ten year's record of successful manufacture.

For price see page 11

HOUSEWIVES APPRECIATE THESE "HAAG" FEATURES

(1) All the mechanism is under the tub providing perfect safety; makes it unnecessary to lift the driving mechanism when raising the lid.

(2) The V-shaped belt does not stretch, slip or break.

(3) High legs make cleaning under the washer simple. Extra heavy large steel casters make it easy to move, even when filled.

(4) Silent and smooth running gears.

(5) Attractiveness and beauty made possible by the copper or natural wood finish tubs and bright aluminum bronze frame work.

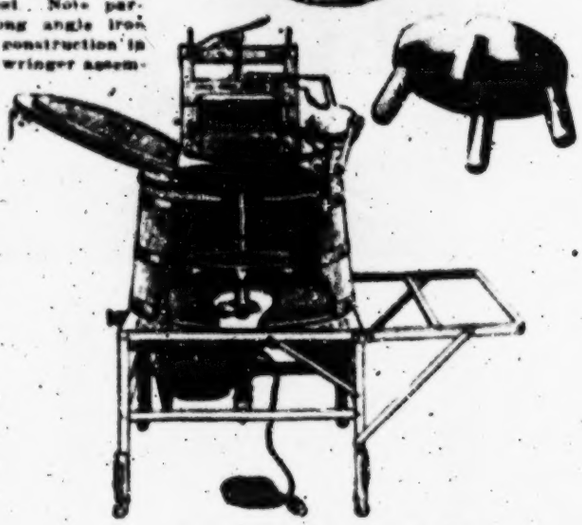
AND HUSBAND'S APPRECIATE

(1) The lasting, sturdy tub; (2) heavy, substantial steel angle iron frame; (3) the short drive direct from motor to belt pulley, that eliminates wear and tear, guarantees long life; (4) the little oiling necessary to keep in finest running order; (5) covered gears (both washer and wringer) that eliminate worry; (6) and the name "Haag" that guarantees the "Nu-Way" is right (every washer backs up our ten year's successful manufacturing record).

WASHES SHEERIEST LINGERIE OR HEAVIEST BLANKETS
Two Agitators are sent w/ h each "Haag Nu-Way"

Both types self-adjusting to large or small washings. Flat agitator especially adapted to dainty fabrics; gently agitates water and clothes without damage to finest materials.

Peg agitator grips washing firmly. Especially adapted to heavy materials and soiled clothes.



Sectional View of the "Haag Nu-Way"

11 37

7/9

The Latest Achievement of the World's Largest Washer Manufacturer...

Only Maytag's vast resources and production facilities can build such quality in a washer at anywhere near the attractive price at which the Model "F" is sold.

It is just the washer you would expect from Maytag . . . a name that stands for washer quality and leadership the world over.

The Model "F" is a washday servant that pays its own wages in time, clothes and money it saves. See this new washer . . . only in the Maytag can you secure such value for the money.

THE MAYTAG COMPANY, Newton, Iowa
Founded 1893

The NEW Model "F" MAYTAG

A quality built washer, priced within the reach of the most modest income.

BRINGING NEW ECONOMY....

Maytag has produced a new washer that sets a new standard of perfection and quality among moderately priced washers. Unusual production economies, and the resources of the world's largest washer factory have made this new washer possible.

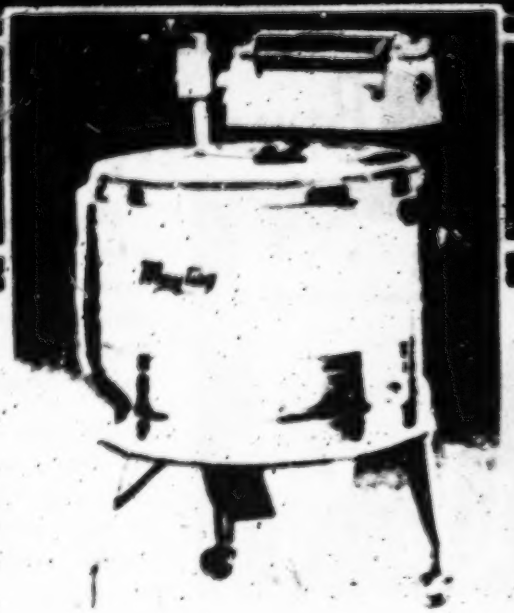
The new Model "F" Maytag is the washer for which millions of homes have been waiting. A quality built washer, priced within the reach of the most modest income, yet built in a manner worthy of the Maytag name and reputation.

Now . . . every home can enjoy the economies of a Maytag washer and the savings in time, effort and wear on clothes. Now . . . every home can enjoy the benefits of a plentiful supply of clean, sweet linens and garments washed at home, easily, economically and properly. The Model "F" Maytag will appeal to the careful buyer . . . for no other washer at a moderate price offers so much value.

DEFENDANT'S EXHIBIT No. 1

1300

NEW MAYTAG



Features Never Before Offered in a Moderate Priced Washer

THE Model "F" Maytag washer has a sturdy roomy tub, which is non-corroding, non-rusting, and easily cleaned. The side corrugations and concave bottom produce extra water agitation and extra cleaning power. The tub is drained by gravity when the drain hose is lowered — no dripping, no bother with valves or screw plugs.

The famous Gyrafoam principle of washing, originated by Maytag, gives the washer its remarkable washing and cleaning action. The gyrator is countersunk in the concave bottom of the tub. Under the gyrator is a collector zone which collects the loosened dirt instead of permitting it to be washed back into the clothes. The water is kept clean. A convenient auto-type shift lever starts and stops the washing action.

The legs of the Model "F" are sturdily supported, made of strong pressed steel and rigidly braced to the steel frame of the washer. There is a caster adjustment on one leg so that the washer will set solidly even if the floor is not level. Casters are large, ease easy-rolling and [illegible] proof.

Oscillating Bath-Rich Wringer. Removing the water, the final step in cleaning, is adequately provided for in the well known Oscillating Maytag feature. It is safe and compact, with an all metal frame which completely encloses the all-rounding rubber rolls. The base of the wringer frame is wide, so that the dirty, cloudy water thoroughly runs into the tub without spilling or dripping on the floor.

The large size rolls of smooth rubber, flush the water and loosened dirt nearly from the garments as they pass through the rolls. The rolls will protect buttons and snaps, wring all parts of the garment evenly dry, and leave no hard-to-iron wrinkles. The tension on the rolls adjusts itself automatically.

On no other washer of moderate price can be found the finished wringer another exclusive Maytag feature. The wringer swings and locks in seven different positions. A convenient safety release permits the rolls to be opened in a width of five inches.

The Model "F" is an exceptionally quiet running washer. The power drive is completely enclosed sealed and lubricated — needs no oiling, no adjustments. The balanced steel gears, engaged and driven by finely made worm of a high grade commercial Timken bearings add to the smooth-running qualities of the washer.

The motor, which is mounted in rubber, minimizes vibration, makes the washer quiet in operation.

The washer is beautifully finished in two-tone gray lacquer which is really kept clean. An inspection of this new Maytag product will convince you that it is a masterpiece of modern washer design. It is fully guaranteed by the world's largest manufacturer of washers.

Feb. 25, 1930. G. L. DAVIS 1,748,442

WASHING MACHINE

Filed Aug. 28, 1924 2 Sheets-Sheet 1

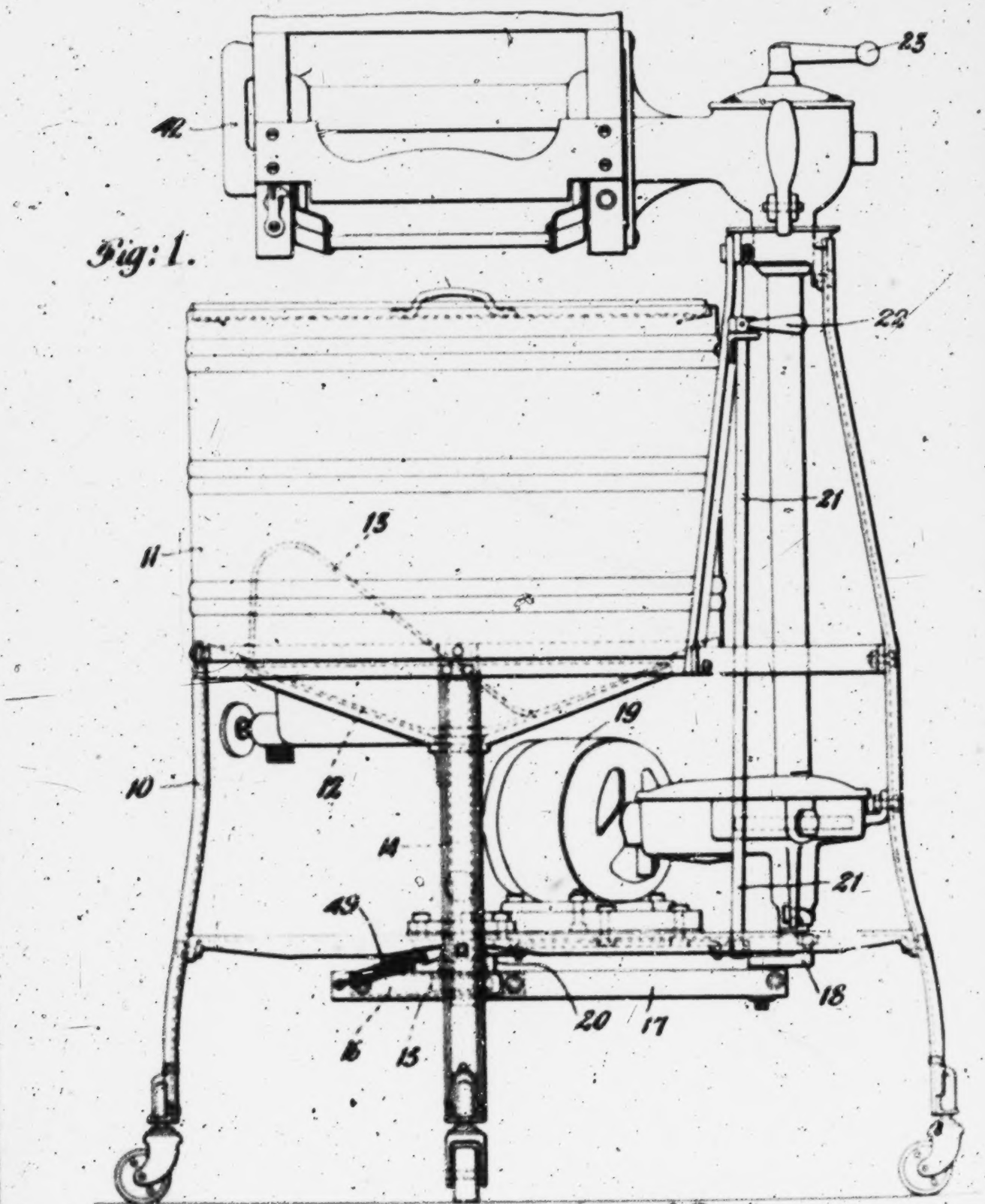


Fig: 1.

George L. Davis Inventor

By his Attorney
Merrell E. Clark

Feb 25, 1930. G. L. DAVIS 1,748,442

WASHING MACHINE

Filed Aug. 28, 1924 2 Sheets-Sheet 2

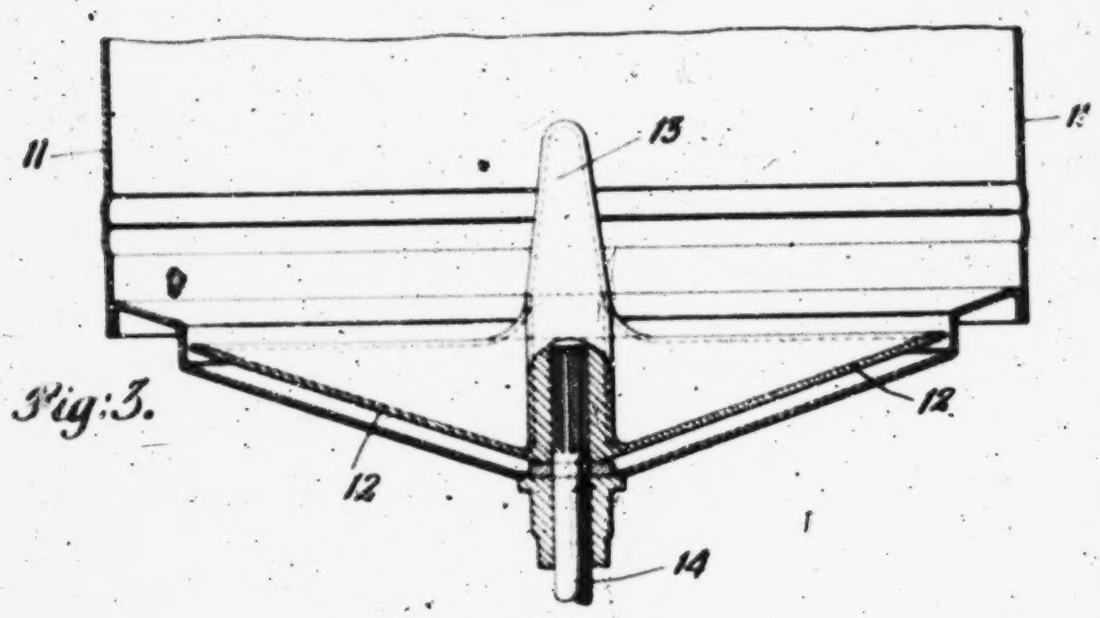
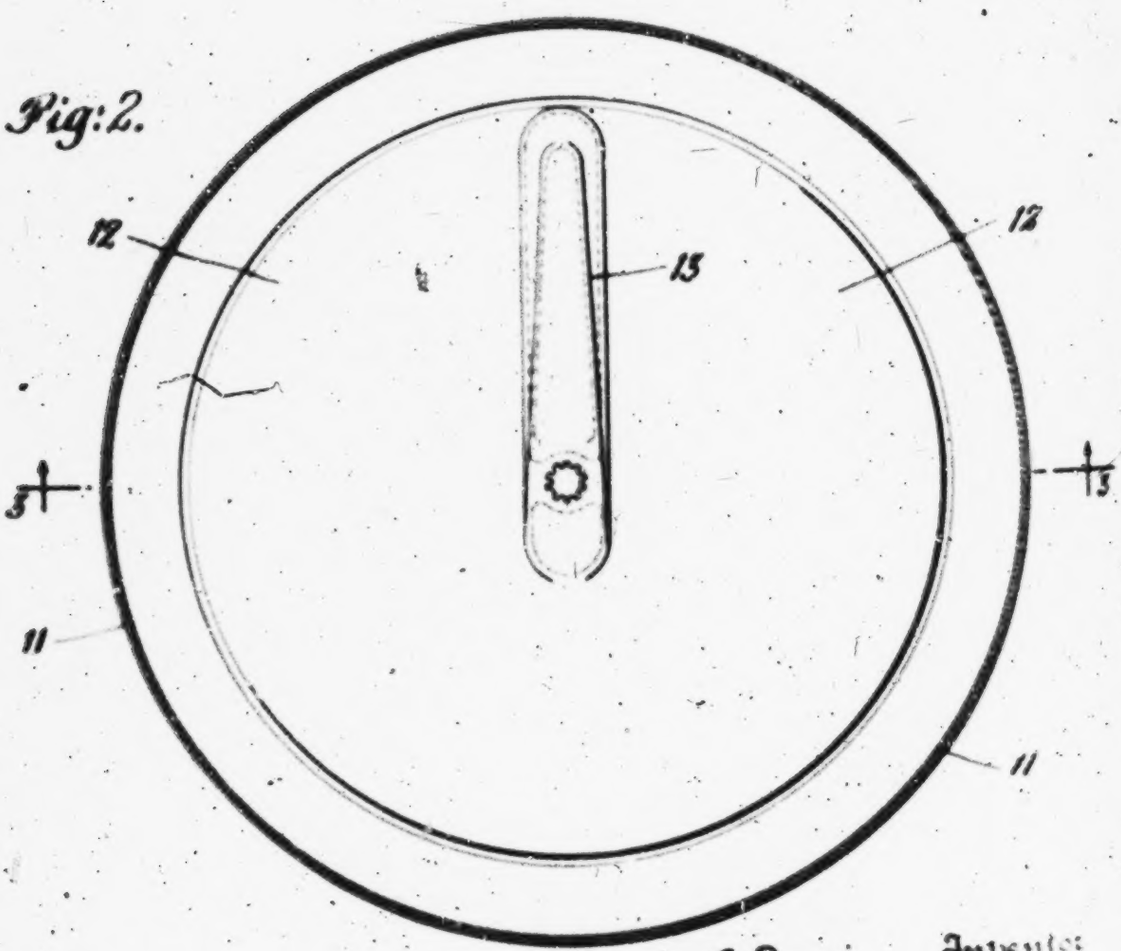


Fig: 3.

Fig: 2.



George L. Davis Inventor

By his Attorney
Murrell C. Clark

1304

Patented Feb. 25, 1930 1,748,442

UNITED STATES PATENT OFFICE

GEORGE L. DAVIS, OF BINGHAMTON, NEW YORK, ASSIGNOR TO NINETEEN HUNDRED CORPORATION, OF BINGHAMTON, NEW YORK, A CORPORATION OF NEW YORK

WASHING MACHINE

Application filed August 28, 1924. Serial No. 734,364.

This invention relates to domestic washing machines of the agitator type, and particularly to such machines, in which the oscillating agitator is below the clothes instead of above them.

A machine of this general type is disclosed in U. S. Patent No. 1,496,305, June 3, 1924, to Doughty and Davis. In that patent the advantages of a "submerged agitator" as compared to an overlying agitator are pointed out. And it is also pointed out that if the vanes upon the submerged agitator are symmetrically arranged, there results a marked tendency for a single one of the many pieces of laundry in the tub to cling to the agitator, thus interfering with the efficiency of the machine in washing. To overcome this difficulty, those patentees provided an agitator having a number of radial vanes on its upper surface, arranged unsymmetrically, as, for example, by leaving a greater space between two of them than between any other two.

The object of the present invention is to provide a submerged agitator which will possess all of the advantages of the agitator of the aforesaid patent, and at the same time give increased agitation to the contents of the tub.

A further object of the invention is to provide a submerged agitator which shall be easy and economical to make, and which will minimize the wear and tear upon the clothes with which it comes in contact in the washing operation.

Further objects and advantages of the invention will appear hereinafter.

In the accompanying drawing which illustrates one embodiment of the present invention, Fig. 1 is a front elevation of the machine as a whole, Fig. 2 is a horizontal cross section of the tub and agitator, looking down upon it, and Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2.

The machine shown in Fig. 1 of the drawing comprises a suitable frame 10 upon which is mounted the stationary tube 11. This tub is preferably made of sheet metal, though, of course, wood may be employed. Also mounted upon the frame 10 is the wringer 42 which may be of any desired type, but preferably it is arranged to swing about its vertical driving shaft as an axis.

At the bottom of the tub 11, as best shown in Figs. 2 and 3, is the agitator 12 which is mounted removably—preferably splined—upon its actuating shaft 14.

Any suitable means may be provided for oscillating the shaft 14. As here shown, these means include the pinion 15 mounted upon the shaft and the rack 16 mounted upon the connecting rod 17. The connecting rod is reciprocated by the crank 18, which is driven through suitable gearing from the motor 19.

Normally the spring 49 holds the connecting rod in position so that the rack 16 is in mesh with the pinion 15 and so that the shaft 14 and agitator 12 are oscillated through the power transmitted through the connecting rod 17. However means, under the control of the operator, such, for example, as are indicated at 20, 21 and 22, are provided for moving the connecting rod away so that the rack 16 is free of the pinion 15, when it is desired to stop the agitator.

The wringer is preferably operated by the motor 19, also, through gearing which may be controlled in a well known manner through the wringer clutch-handle 23.

Coming now to the construction of the agitator 12 itself, it is preferably, though not necessarily, in the form of an inverted cone. And it has but a single major vane 13. The contour and arrangement of this vane is the result of much experimentation. And it has been found that by employing a submerged agitator, with but a single major vane, shaped in general like the one shown, remarkable efficiency is attained.

It will be understood, of course, that the efficiency of any washing machine depends not only upon the degree of agitation produced within the tub, but also upon the extent to which all of the clothes within the tub are subject to that agitation. For example if, in the machine illustrated, the clothes remained throughout the washing operation in the same relation to each other, i. e. if the top clothes remaind on top and the bottom ones on the bottom, etc., the efficiency of the

machine as a whole would be low. It is therefore necessary, for the highest efficiency, that the agitator, by its oscillations shall set up currents of water which will move the clothes from top to bottom of the tub, and vice versa, as well as currents following generally the direction of movement of the agitator itself.

The agitator 12 shown in the drawing with its single vane 13, fulfills all of the requirements. As will be noted the vane 13 is highest at the outer periphery of the agitator and its height decreases gradually from there to its inner end, just beyond the center. The vane is of sufficient width to give it the requisite stability and to avoid anything in the nature of sharp edges which might injure the clothing. As shown, all of its surfaces are rounded. Also its width gradually increases from top to bottom.

No attempt is here made to explain, in detail, the mechanical and hydraulic principles upon which the operation of this novel agitator depends. Suffice it to say that this agitator does, in fact, produce currents or eddies of such a kind and in such directions that all of the clothes are subjected to extremely efficient agitation and washing. There is no tendency for any of the clothes to remain in contact with the agitator an excessive length of time, but on the other hand all of the clothes are constantly being moved from top to bottom and vice versa, as well as in a horizontal direction. While I do not wish to be bound by any particular theory of operation of my improved device, it is my opinion that there are two reasons why my agitator with a single major vane overcomes satisfactorily the tendency of particular pieces of clothing to cling to the agitator. The first is that the single major agitator produces a strong, concentrated current which brings to bear a strong force acting in a definite direction to remove the clothing from the agitator, whereas the well known multi-vane agitators set up a number of diverse currents whose combined effect is not to remove the clothing from the agitator, but on the contrary, to hold it on the agitator. The second of these reasons is that the rapid reversals of movement of the agitator has a tendency to throw the clothing off from the single major vane, whereas when a multi-vane agitator is used the throwing off of clothing from one vane, if it occurs at all, is generally followed by its being caught by other vanes. The overcoming of this tendency of the clothes to cling to the agitator not only makes for efficient washing, but also eliminates the extremely hard wear to which garments are subjected when they cling to the rapidly oscillating agitator.

While I have shown but one particular form of agitator embodying my invention, and but one form of washing machine equipped with such an agitator, it is to be understood that my invention is not limited to this exact form of agitator or to any particular form of washing machine. On the contrary, many changes may be made in the disclosure hereof without departing from my invention. For example, agitators embodying my invention may be provided with smaller vanes in addition to the vane here shown, which I term the "major vane." So also the surface of the agitator itself may be modified as may the particular shape of the major vane. Again, although I have here shown my invention as applied to a stationary tub machine, it is applicable also to machines in which the tub oscillates, the bottom of the tub itself being provided with a vane and constituting the agitator. The term "agitator" as used in the claims is intended to cover agitators formed integral with the tub or container as well as separate agitators. There are many similar variations within the scope of my invention, which will occur to those skilled in the art.

In certain of the appended claims the agitator is described as acting upon the contents of the container to cause them to move "up and down and from one side to the other of the container". This description of the movement of the tub contents is intended to differentiate from the symmetrical movement produced by an agitator which has a plurality of symmetrically arranged blades of equal size (four, for example), and which instead of causing the contents to move from one side to the other of the container, causes these contents to move centrifugally and centripetally.

What I claim is:

1. In a washing machine, a container, an agitator located therein, and means for actuating said agitator, said agitator including a single major vane extending from approximately the center of the agitator to approximately its outer edge.

2. In a washing machine, a container, an agitator located therein, and means for actuating said agitator, said agitator including a single major vane extending, and gradually increasing in height, from approximately the center of the agitator to approximately its outer edge.

3. In a washing machine, a container, an agitator located adjacent the bottom thereof, and means for actuating said agitator, said agitator including upon its upper surface a single major vane extending from approximately the center of the agitator to approximately its outer edge.

4. In a washing machine, a container, an agitator located adjacent the bottom thereof, and means for actuating said agitator, said agitator including upon its upper surface a single major vane extending, and gradually increasing in height, from approximately the

nter of the agitator to approximately its uter edge.

5. In a washing machine, a container, an gitator located adjacent the bottom thereof, nd means for actuating said agitator, said gitator including upon its upper surface a ngle major vane extending from approxiately the center of the agitator to approxiately its outer edge, said major vane gradally increasing in width from top to bottom.

6. In a washing machine, a container, an gitator located adjacent the bottom thereof, nd means for actuating said agitator, said gitator including upon its upper surface a ngle major vane extending, and gradually ncreasing in height, from approximately the enter of the agitator to approximately its uter edge, said major vane gradually increasing, also, in width, from top to bottom.

7. In a washing machine, a container, an gitator located adjacent the bottom thereof, nd means for actuating said agitator, said gitator having a conical surface and including a single major vane extending, and gradually increasing in height, from approximately the center of the agitator to approximately its outer edge.

8. In a washing machine, a container, an agitator located adjacent the bottom thereof, and means for actuating said agitator, said agitator being in the form of an inverted cone and being provided with a single major vane extending, and gradually increasing in height, from approximately the center of the agitator to approximately its outer edge.

9. In a washing machine, a container, an agitator located adjacent the bottom thereof, and means for actuating said agitator, the upper surface of said agitator being in the form of an inverted cone and being provided with a major vane extending and gradually increasing in height from approximately the center of the agitator to approximately its outer edge, said major vane gradually increasing, also, in width from top to bottom.

10. In a washing machine and the like, a body portion having a smooth surface, and an impelling projection extending from said surface and located to one side of the central part of said surface, the remainder of said surface being smooth and free of projections.

11. In a washing machine, an agitator member comprising a plate having a smooth surface, a single blade extending along a line in said surface between the central and edge portions of the plate and substantially normally to the surface of the plate.

12. In a washing machine, the combination of a tub and an alternately rotatable agitator comprising an eccentrically located single major impeller for acting upon the contents of the tub.

13. In a washing machine having a tub and operating means, an alternately rotatable agitator in the tub and operatively connected to said means, said agitator having a single major blade and being concaved and arranged in inverted position to present the blade and the concaved portion thereof to the contents of the tub.

14. In a washing machine having a container for holding a cleansing fluid and material to be cleansed, an agitator in the container, means for alternately rotating the agitator, said agitator having a single major eccentric means extending from the agitator for acting upon the contents of the container to cause a movement of the contents up and down and from one side to the other side of the container.

15. In a washing machine having a container for holding a cleansing fluid and material to be cleansed, an agitator in the container, means for alternately rotating the agitator, said agitator having a single major blade extending from the face of the agitator and arranged to effect a movement of the contents up and down and from one side to the other side of the container.

16. In a washing machine having a container for holding a cleansing fluid and material to be cleansed, an agitator in the container, means for alternately rotating the agitator, said agitator having a single major blade of substantial axial width and arranged to effect a movement of the contents up and down and from one side to the other side of the container.

17. In a washing machine having a container for holding a cleansing fluid and material to be cleansed, an agitator in the container, means for alternately rotating the agitator, said agitator having a single major impelling blade extending along a radius of the agitator and having a substantial axial width to effect movement of the contents up and down and from one side to the other side of the container.

18. In a washing machine having a container for holding a cleansing fluid and material to be cleansed, an agitator in the container, means for alternately rotating the agitator, said agitator having a single major impelling blade substantially parallel to the axis of rotation of the agitator and eccentrically thereto to effect a movement of the contents up and down and from one side to the other side of the container.

19. In a washing machine, a container and an agitator located adjacent the bottom of the container, said agitator comprising an alternately rotatable member having a single asymmetrically disposed impelling portion extending upwardly therefrom.

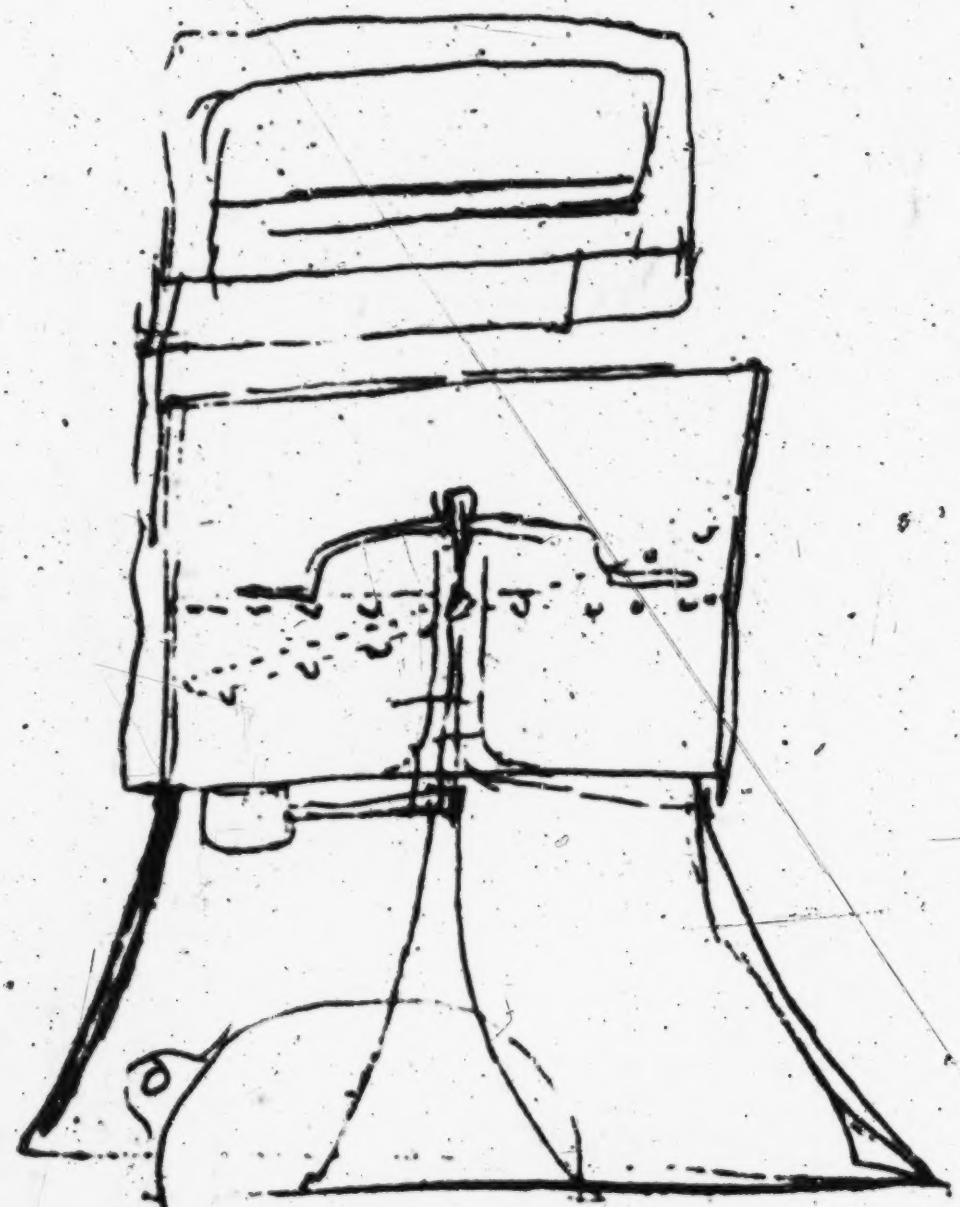
20. In a washing machine, a container, an agitator located therein, and means for actuating said agitator, said agitator including a single major vane extending from approximately the center of the container toward its outer wall.

21. In a washing machine, a container, an agitator located adjacent the bottom thereof, and means for actuating said agitator, said agitator including a single major vane extending from approximately the center of the container toward its outer wall.

22. An agitator for washing machines, comprising an alternately rotatable body portion and a single asymmetrically disposed impelling portion extending substantially normally from said body portion.

GEORGE L. DAVIS.

DEFENDANT'S EXHIBIT No. 7



agitator Electric
new design
E. T. & B.
2/9/20

Actions of the revolving tilter
agitators address 9/16/20
Hand

5 9

Washer-Agitator type
Metal tub
Direct-connected motor
Metal wringer

7- Grams 11/7/20

or - Water
Requirements
2/20/20
Less Price than Cataract
Smaller capacity.
Motor underneath (entirely protected from water)
Simple mechanism
Cofferdam tub
Direct drive
Slip joint -

Perhaps 20 watts for other
pendulums while idle
Table

Quiet
Self reg. type

DEFENDANT'S EXHIBIT No. 9

13019

Jan. 11, 1911.

FLB

Advertising, etc.

Mr. W. Lee Holmes,
328 Phelan Building,
San Francisco, Cal.

Dear Mr. Holmes:

In regard to your letter of the 3rd, we might just as well face the fact, Mr. Holmes, that on the basis of 40, 8 and 8 discount there is going to be no possibility of an advertising allowance. Even on the Interest washer at the present cost of material this discount plus our selling expense brings the machine to a place where there is no profit unless we can get a real volume--I don't mean merely from Dahlman but from all over the whole country. If we can get a big volume of sales then our overhead selling expense comes down and of course that's what I have in mind on this discount.

I have not written you before because I thought it wasn't important, but on the Agitator machines the discount of 40 and 8 and 8 brings the price to Dahlmann on No. 1 Agitator to less than the factory cost, allowing nothing for overhead or selling. The reason I am not paying any attention to this is that the New Agitator which we are developing is ready we will place a price on it which will take care of this condition and we will drop the old Agitator. Inasmuch as this will be a matter of only ten or three months I didn't think it best to take any exception to the contract on this point but to let it go.

I have just this moment received your telegram in regard to Thos. A. Gagnon of the Seattle Electric Washer Company and I believe as you do that this will be to our advantage.

Yours very truly,

The "1900" Washer Company.

Mr. Barker c

General Manager.

5 11

Jan. 15, 1921.

HLB Cabinet Type Machine. 1311

Mr. W. Lee Holmes,
323 Phelan Building,
San Francisco, Cal.

Dear Mr. Holmes:

I have your favor of the 11th.

In regard to the new machine, I can now state positively to you that it will not be a cabinet type machine. These movements seem to originate in the East and move west and they reach California about a year afterward. Good times and bad times follow this course and I guess it's just the same way with washing machines. Six months ago the Eastern dealers were talking about an enclosed machine and we had made up our minds that it would be necessary to build one but today all the big dealers in the East are opposed to the cabinet machine. We haven't a single big store that I can think of now that advocates it. They do advocate a beautiful machine and one that is a safe machine, that is, with all dangerous points enclosed, but they do not want the cabinet so you can be reasonably sure that we are not going to build a cabinet machine.

Now, in regard to the new machine I do not think there is any chance of it's getting out before the latter part of next summer. If Mr. Crary had lived it would have been out about the first of June but Mr. Crary's death made quite a little change financially. It will take quite a large amount of money to put the new machine on the market and while the estate is in the hands of an executor and until some definite steps are taken by him we don't want to borrow the money to put this machine on the market. The consequences are that we are not pushing it as we would otherwise. However, it will be out, I believe, the latter part of the summer.

Business is picking up. I know that it has been so with us since the first of December and I had a letter from Mr. Smith, Secretary of the Washing Machine Mfrs. Association, in which he says that business generally in washing machine circles is picking up. He didn't mention just who but he is around visiting different factories and evidently things are going well with the other manufacturers as they are with us.

Yours very truly,
The "1900" Washer Company.

5 12

Mr. Barker c General Manager.

7-26-1921

Test of Whirlpool Washer

Washing	lbs	oz	Approx wt.
White clothes	9	5	
Colored	1	14	
Rugs	2	14	
Canvas	4	2	
	18	3	Total.

Temperature of water in pail or drawn from faucet 136 - 130 ± 4°. 7 1/2 gal of water used
After putting in tub 126°

	Time	Suds	Rinsed	Finish
White clothes	run 20 min			118°
Colored	10			114°
Rugs	20	+1		110°
Canvas	45	+3		100°

Soap chips used.

Washing quite satisfactory.
Some tendency with white clothes to stay in suds without much change in water. The advantage of white clothes was about all that could be accommodated in one load but is something to be determined

5 13

Whirlpool. washer. 2/5/21

whether or not half the quantity
new half the time would not give
better satisfaction.
Until a small quantity the agitation
and change in position of the clothes was
much more rapid.

5 14

1:11

Feb. 16th, 1911.

HLB

San Francisco Sales Meeting.

Mr. W. Lee Holmes,
325 Phelan Building,
San Francisco, Cal.

Dear Mr. Holmes:

I have your letter of the 10th in regard to San Francisco.

I am glad that you had a meeting of the salesmen of the Schraemm Commercial Company and Mr. Bush I know can give a very fine talk. I have not heard a word from Bush except your letter and this is the first intimation I have received that he is coming back East. What do you know about him?

In regard to the Copper Agitator, I wish that we had this machine ready for market in the improved form. I believe we will have it within the next couple of months. In order to be sure of our ground we have built three new models and we are going to have a meeting shortly and make a decision as to which model is the best and then go ahead with it. We have really turned out one model which is a little different from anything I had any idea of and it looks like a crackerjack. We can build a wonderful and a beautiful machine at a reasonable price. When we make the price it will be sufficient so that we can give the jobber 40, 5 and 2.

Yours very truly,

The "1900" Washer Company,

General Manager.

Mr. Barker c

5 25

1315

Feb. 17, 1921.

RLB New Washer.

Mr. W. Lee Holmes,
310 Phelan Building,
San Francisco, Cal.

Dear Mr. Holmes:

I have your letter of the 11th in regard to the new washer.

I do not believe you had better pay any attention to this new washer. We had thought that we would bring it out this summer but Mr. Behan took one of these new machines to his home and while the machine looks fine and the principle is good he is convinced that we have got to make quite a lot of changes before it is going to be 100 per cent. The result is that we are going to build a limited number of these machines and place them in the homes of our own people where they can be thoroughly tested out and that's going to take time, so I think you had better forget the new ~~machine~~ for a number of months at least.

We are working, however, on the new Agitator and it looks better all the time. This is going to be a real machine, one that is going to satisfy the public and will be sold at a reasonable price. When this machine comes out it may satisfy the people that it's the machine they have been told about.

Yours very truly,

The "1900" Washer Company,

Mr. Barker 5 16

General Manager.

1316

The "1900" WASHER COMPANY
INCORPORATED

Manufacturers of the Celebrated
"1900" WASHERS and WRINGERS

Member American Hardware Manufacturers Association

V. B. CRARY, President
W. L. HARRIS, General Manager

Cable Address "1900 WASHER" BINGHAMTON
Telephone Phone Call 1900

In reply refer to attention of

Binghamton, N.Y.
March 23, 1921.

SURGERY

Messrs Fish, Richardson & Neave,
5 Nassau Street,
New York City.

Gentlemen:-

Attention Mr. Merrell E. Clark.

In relation to the washing machine with the submerged agitator which you saw on March 14th.

We are having a sketch prepared showing the principle of this machine and will either enclose it with this letter or forward it to you soon. From this sketch and the following description we believe that you can get an accurate ideaof the features which we believe this machine embodies.

The principal structural features consist of

A tub - open at the top (or closed with a light weight cover as desired).

A shaft - projecting a short distance into the tub from the center of the bottom.

An agitator - carried on the end of the shaft just inside the bottom of the tub.

Vanes or ribs - peculiarly arranged on the upper surface of the agitator.

A motor.

A connection - between the motor and the agitator, by which the latter is given a reverse motion of revolution upon its shaft (about one-half of a revolution as constructed at present).

A wringer - also connected to the motor.

Means for starting and stopping the wringer & agitator.

And a framework for maintaining the parts in a suitable relation.

When the water is placed in the tub and the agitator is started, the vanes upon its upper surface tend to set up a rotation in the mass of water, especially in that portion of the water immediately above the agitator. This rotating motion tends to throw the water toward the circumference of the tub by centrifugal action, thus drawing it out of the center at the bottom, raising it at the circumference and completing the circulation by returning to the center downwardly along the upper surface. This action of the water continues as long as the agitator moves in one direction. When the motion of the agitator is reversed, the motion of the water is broken up, but is reestablished at once by the resumed motion of the agitator. There are certain other motions imparted to the water by the vanes of the agitator, which modify but do not prevent the circulation above described.

When clothes to be washed are placed in the water the circulation of the water is retarded, but is still apparent in the gradual change in the position of the clothes while they are being acted upon.

An especial point of advantage of the submerged agitator machine is that the clothes being washed are not restrained at the top but are free to move in various directions as they are acted upon by the water.

Another advantage results from the avoidance of an action which occurs in the top agitator machine which causes the agitator to sink in the water and restrict the free movement of the clothes. The reason for this objectionable action is this: the vanes on the agitator when in motion cause the water to flow from the center toward the side of the tub. Consequently, the center is lowered and the agitator, which is only held in position by floating upon the water, or by the supporting effect of the clothes, is drawn down with the result of compressing the clothes, restraining their free movement and increasing the power required to operate the washer.

The agitator of the submerged type is also constructed in a novel manner. Previously such agitators have had vanes symmetrically arranged and radiating from the center. For this machine it is found preferable to arrange the vanes about a point other than the center, or to use some other unsymmetrical arrangement, as for example, by omitting one of the vanes. The purpose accomplished by this arrangement is to cause the clothes to be operated on in an irregular manner and prevent them from remaining in a state of rest at the center of the tub.

The foregoing description relates to the novelty in construction and operation. In addition to this, there are certain advantages from a manufacturing, commercial and operating standpoint.

1318

2726

No. 3 - F.,R.&B.

The use of the submerged agitator allows the use of a lighter construction at the top of the tub, inasmuch as it is not necessary to provide a mounting for the transmission of the necessary power.

The absence of this heavy structure is an advantage, in that it removes the possibility of injury to the operator in case it should fall unexpectedly to its closed position.

In operation considerable time can be saved, inasmuch as wringing can be commenced while washing is continuing, so that pieces which are most soiled can have the benefit of a longer washing without longer time being needed for the whole operation.

The open top provides means for doing any hand rubbing which is sometimes necessary for particularly soiled pieces. A hand rub board can even be used without having any top mechanism to interfere.

The operation of washing is always in full view, or may be made so by the removal of a light cover.

Since the power transmitting mechanism is all below the tub the center of gravity is very much lower and the whole machine is much more stable.

Since the tub has no operating mechanism connected with it, it can be removed in case of injury without trouble.

If there is anything in this description which is not entirely clear, or any other points about which you wish information, we shall be very glad to write you further.

Yours very truly,

The Nineteen Hundred Washer Co.

Engineer.

EWD:LS

5 19

1319

The "1900" WASHER COMPANY
INCORPORATED

Manufacturers of the Celebrated
"1900" WASHERS and WRINGERS

Member American Hardware Manufacturers Association

H. H. MANN, President
H. J. BARKER, General Manager

Cable Address
"MANN-MADE" BINGHAMTON
Binghamton Code Used

In reply refer to attention of

Binghamton, N.Y.
March 28, 1921.

Messrs Rich, Richardson & Newton,
5 Nassau Street,
New York City.

Gentlemen:-

Attention Mr. Merrell E. Clark.

We are enclosing herewith blue prints, our sketch No. 522, which we promised to send you in our letter of March 23rd.

Very truly yours,

The Nineteen Hundred Washer Co.

Engineer.

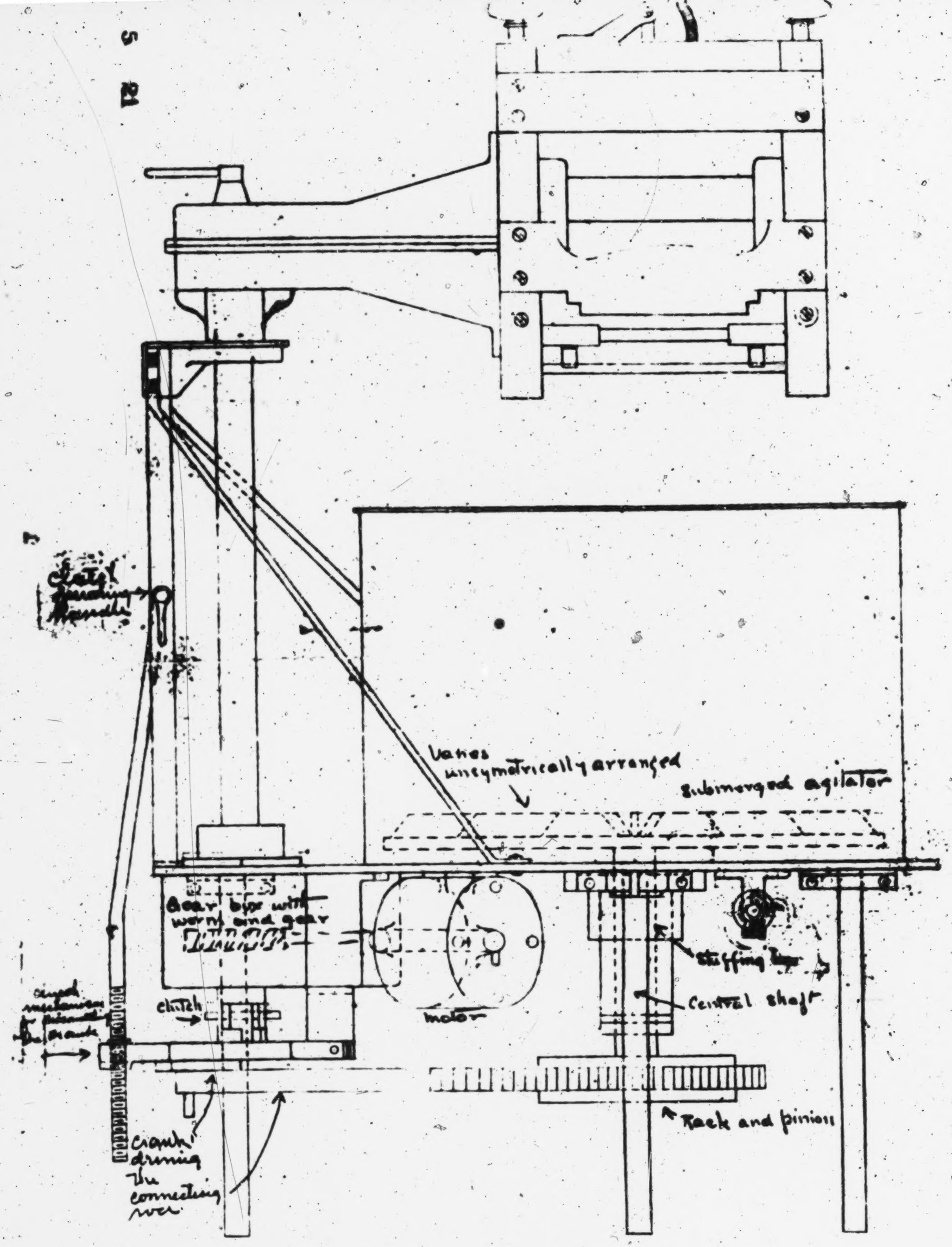
HWD:LS

(Also 1 print - sketch No. 521)

To keep in mind

5 20

1319



Washing Machine with Submerged Agitator.

1900 Washer Co
Binghamton NY
Mar 22 1921

1330

a thirty day written notice and paying all royalties due up to the time when such termination and cancellation takes effect.

SEVENTH: It is mutually agreed that this license contract, subject to the provisions of paragraph Sixth, shall be in full force until the expiration of the longest enduring patent or patent arising out of the application identified in the preamble, and shall be binding on the parties and their successors and on the assigns of first party.

Executed in triplicate by The Maytag Company, by its duly authorized officer, this....30th.....day of .....March....., 1922.

The Maytag Company,

By... F. O. Maytag
Secretary & Treasurer

EXECUTED in triplicate by second party, by its duly authorized officer, this...30th day of...March....., 1922.

The "1900" Washer Company,

By... H. L. Barker.
Vice-President

STATE OF Illinois }
COUNTY OF Cook } ss.

On this ..30th day of .....March....., 1922 personally appeared before me. F. E. Maytag, to me personally known to be the person who executed the foregoing instrument as Secy. & Treas of THE MAYTAG COMPANY, who testified that he has authority to execute the same for the uses and purposes therein expressed.

..... J. V. Curran .....
Notary Public.

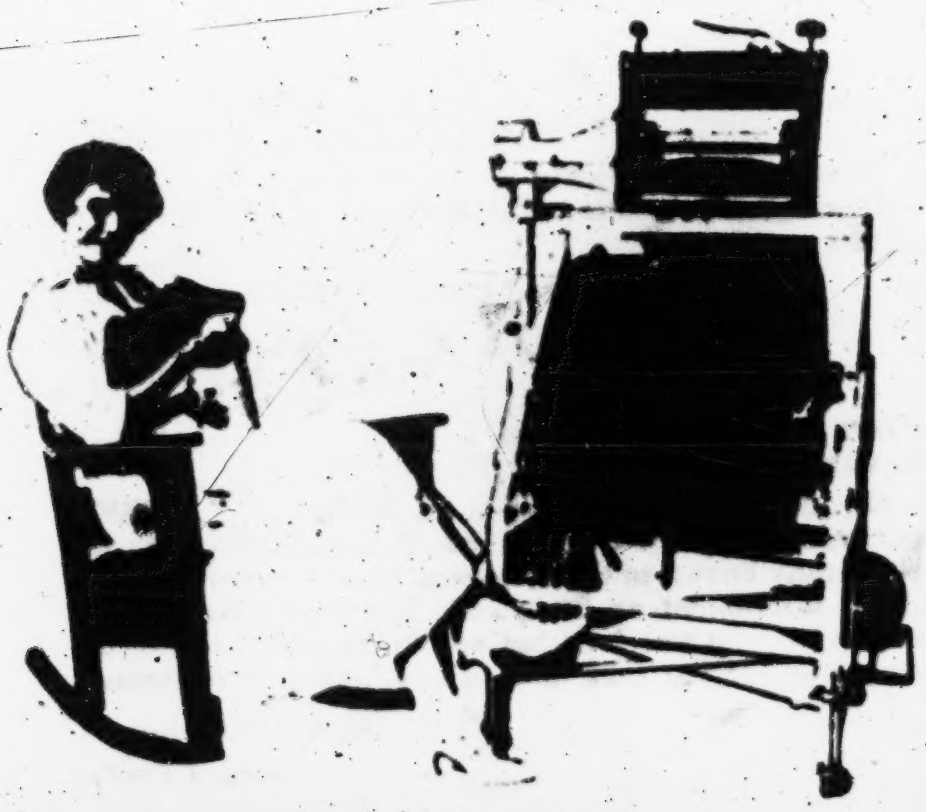
STATE OF Illinois }
COUNTY OF Cook } ss.

On this .30th.. day of ....March....., 1922 personally appeared before me. H. L. Barker, to me personally known to be the person who executed the foregoing instrument as. Vice-Pres. of The "1900" Washer Company.., who testified that he had authority to execute the same for the uses and purposes therein expressed.

..... J. V. Curran .....
Notary Public.

5 22

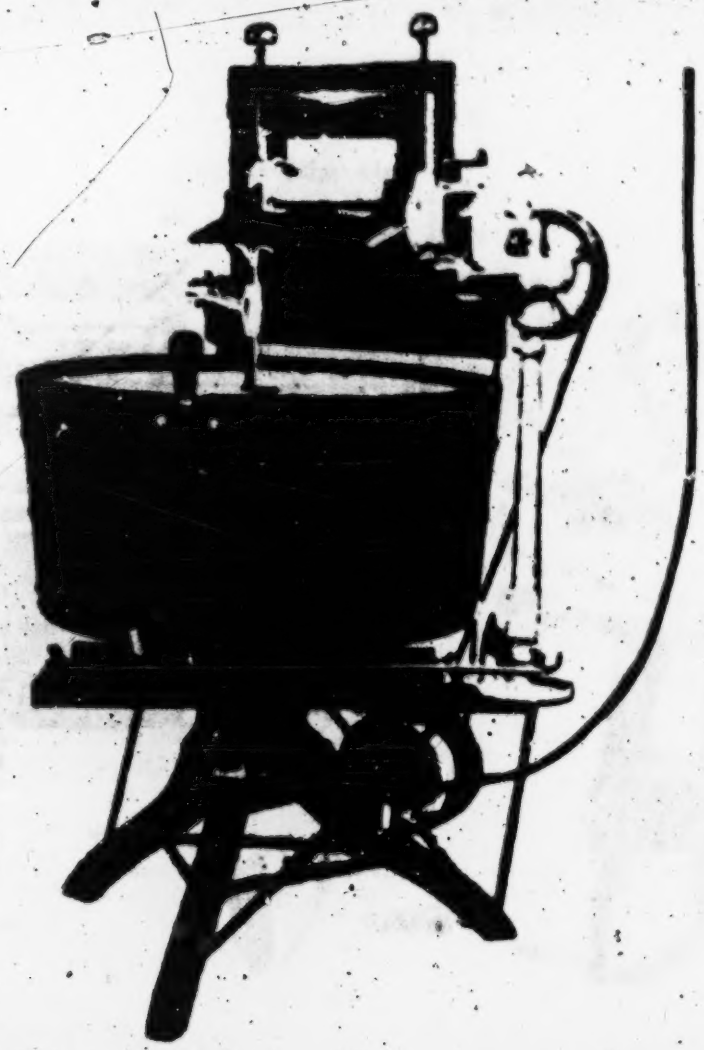
The "1900" Cataract Washer



[illegible] motive-power of water gives maximum washing effect in minimum time. Solid copper tub (in galvanized iron) to facilitate circulation. No brass cylinder or mechanical devices to wear or tear the clothes. Swing reversible wringer with safety release. Operates Washer and Wringer at same time. Family Size (eight sheet capacity) shipping weight 1, C. L. 325 pounds. C. L. 325 pounds. Laundry Size (twelve sheet capacity) shipping weight 1, C. L. 347 pounds. C. L. 370 pounds. If elec. tric current is [illegible] give voltage. If Alternating, voltage and cycles, so that proper motor can be furnished.

The "1900" Standard Electric Washer

REVERSIBLE WRINGER



Removable tub, agitator and post. Is of oscillating type stationary reversible power driven wringer. Capacity 4 sheets, shipping weight 195 pounds with motor, 165 pounds without motor. If electric current is Direct, give voltage and if Alternating, voltage and cycles, so that the proper motor can be sent.

1921

The "1900" Agitator Electric Washer

REVERSIBLE SWING WRINGER—Form No. 1.

Stationary tub, agitating agitator—large tub opening. Reversible wringer with safety release. Tub mounted on 4 wooden legs. Four sheet capacity. Can be furnished with electric motor or gas engine. Shipping weight with electric motor 300 pounds, without electric motor 175 pounds. With ½ h. p. engine, 320 pounds. If electric current is Direct give voltage and if Alternating give voltage and cycles so proper motor can be sent.

5 25

"1900"
Agitator Electric Washer

FORM No. 2

Family Size Only

This machine is similar in construction to the machine shown on page 7. Instead of wood legs it has a metal base and legs, and can be equipped with detachable metal stands for clothes basket and extra tub.

The Form 2 Agitator Washer can be used with Gas Engine.

Cuts of this machine will appear in our new catalogue.

Shipping Weight, 243 lbs.

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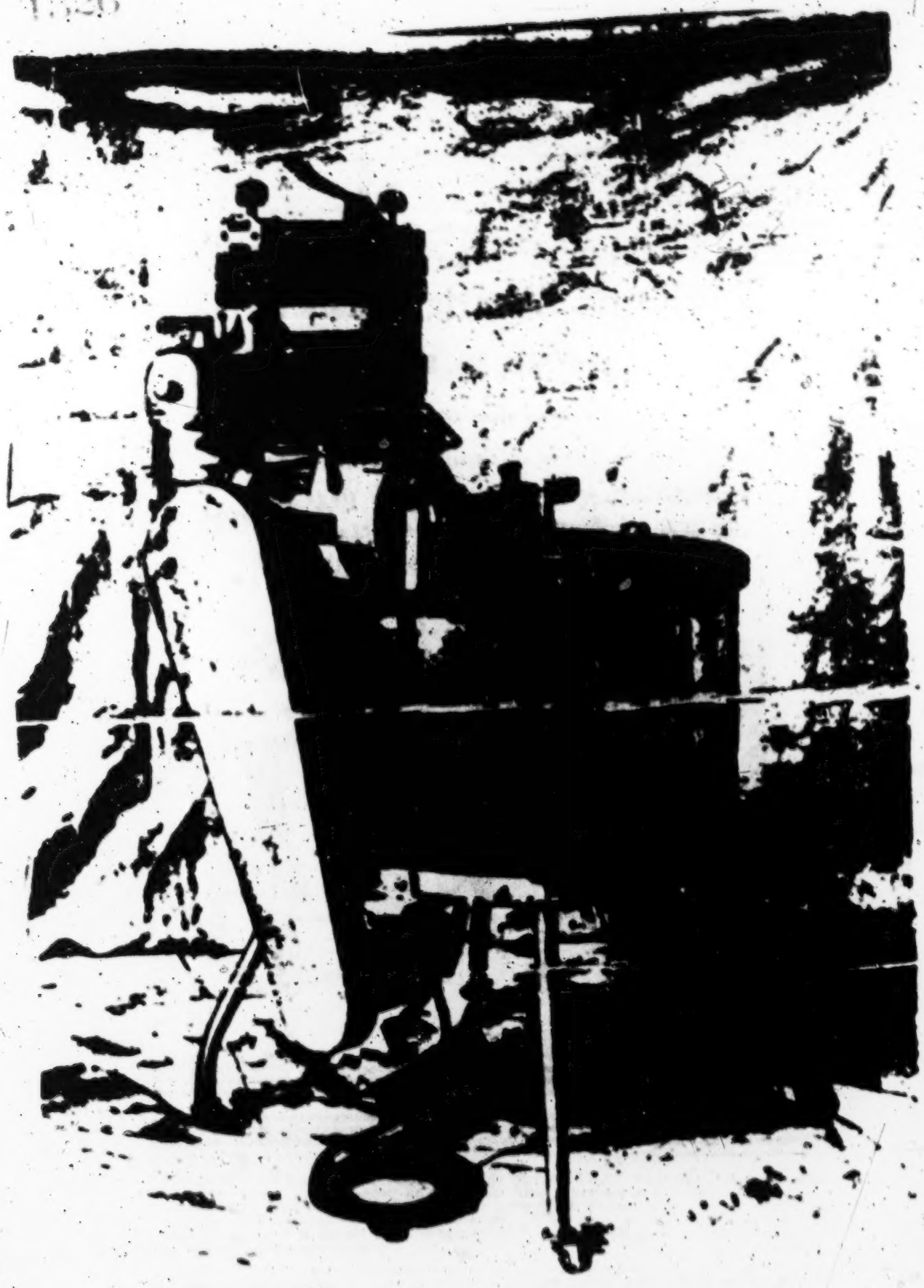

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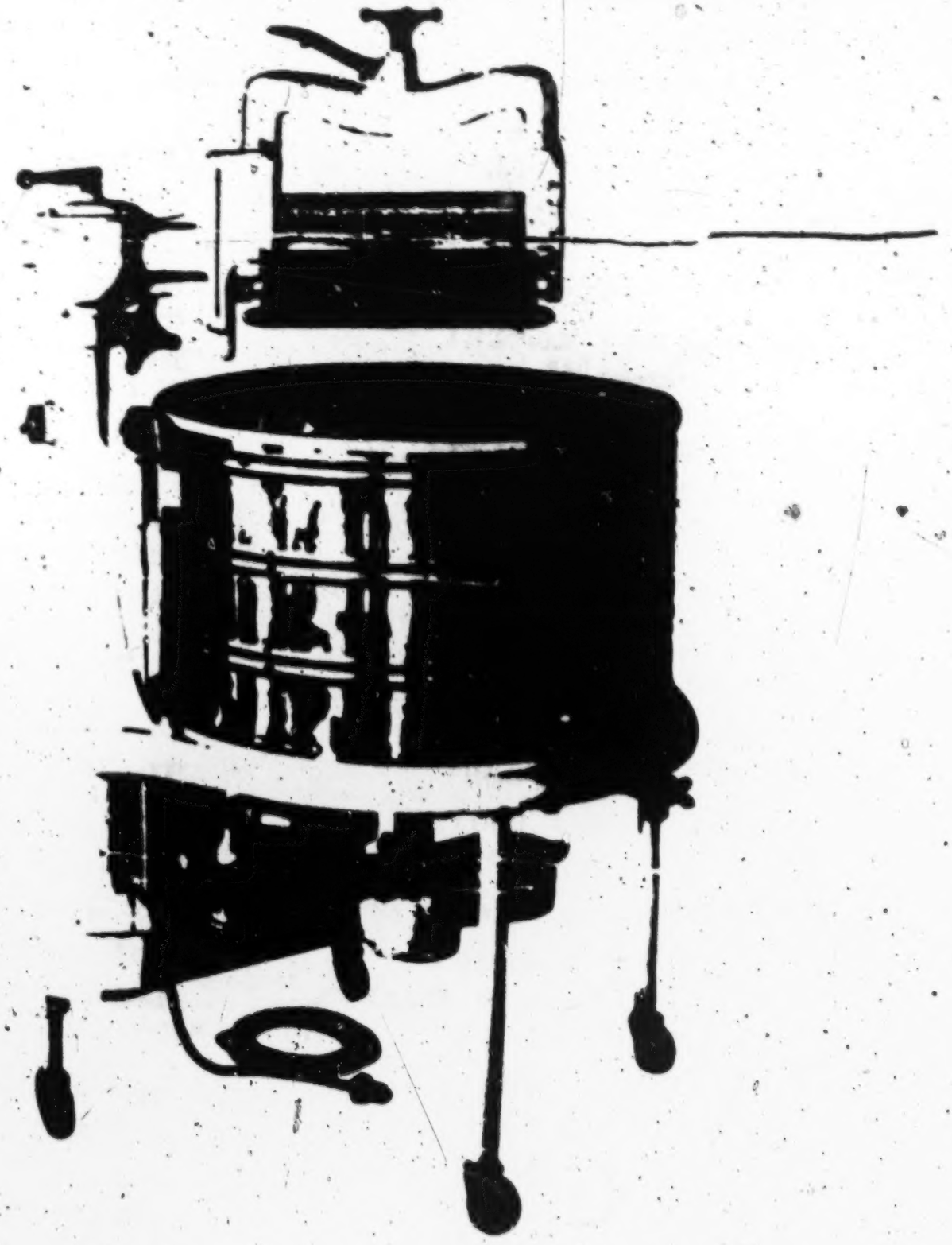

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DEFENDANT'S EXHIBIT No. 11

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1253 MAY 5 1922

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1900 AGITATOR WASHER

Model 400

5 45

Made by the manufacturers of the famous 1900 Whirlpool line of washers and ironers

FEATURES

HIGHEST QUALITY PORC-ENAMEL TUB

Full rust-free enamel inside and outside on Armco ingot metal base. Beautifully finished in dapple gray. Completely rust proof

BALLOON ROLL PRESSURE CLEANSER

Water is removed by the use of full 2¼-inch soft balloon wringer rolls. Pressed steel housing. Seven water removal positions

SIMPLE AND CONVENIENT CONTROL

One simple control for operation of washer. When washer is stopped clothes are accessible without removing agitator. Wringer is also operated by one convenient lever

IMPORTANT MECHANICAL FEATURES

Case hardened and precision ground parts. Cut gears. Special purpose bearings. Automatic oiling. Direct drive. Quick and complete drainage

CAPACITY AND COMPACTNESS

6 lbs. dry clothes per tub. Larger than the average medium priced washer and yet this washer occupies very little space. Little as a person could turn around in. When not in use it pushes back into a corner and occupies a small space even in a very small kitchen apartment.

A QUALITY WASHER AT A LOW PRICE

Designed and built to embody all the practical refinements of mechanical construction and operating efficiency of higher priced washers at a price which enables owners to purchase at her convenience

CONTRACT PURCHASE PLAN

A Contract Purchase Plan enables you to show that the money you spend for this washer is actually money earned. A small down payment enables it to more than earn its own cost

AG-1 1938-6-28-A.P.

5 44

1900 AGITATOR WASHER
MODEL 400

Manufactured by
NINETEEN HUNDRED CORPORATION
Binghamton, N. Y.

DEFENDANT'S EXHIBIT No. 12

1313

BILLING COPY

Ordered 10/30/41 Apex Washer Co

Name W. Lee Holmes,

Address 323 Phelan Bldg.
San Francisco, Cal.

Shipped Oct. 8, 1941.

Invoice No. 9959 A

Req. No. 11156 A

Customer's No. 8649

Consigned to SAME

Make-out Card

Order Inquiries

Routing Erie Collect C. B. & Q. - U. P. c/o So. Pacific Lines at Ogden

No.	Items	OCT 12 1941	Factory Cost Unit	Factory Cost Total	Sales Price Unit	Sales Price Total
2	Samples of new Agitator Electric		61 26	122 52	61 26	122 53

FORM 2

memorandum only

for OBR

DEFENDANT'S EXHIBIT No. 13

13111

5 46

2

4433

DEFENDANT'S EXHIBIT No. 14

BILLING COPY

Ordered 11/26/'31 Shipped

Name E. J. Coyne, Invoice No. 1744

Address 106 S. Salina St., Reg. No. 11632

Syracuse, N. Y. Customer's No. 3814

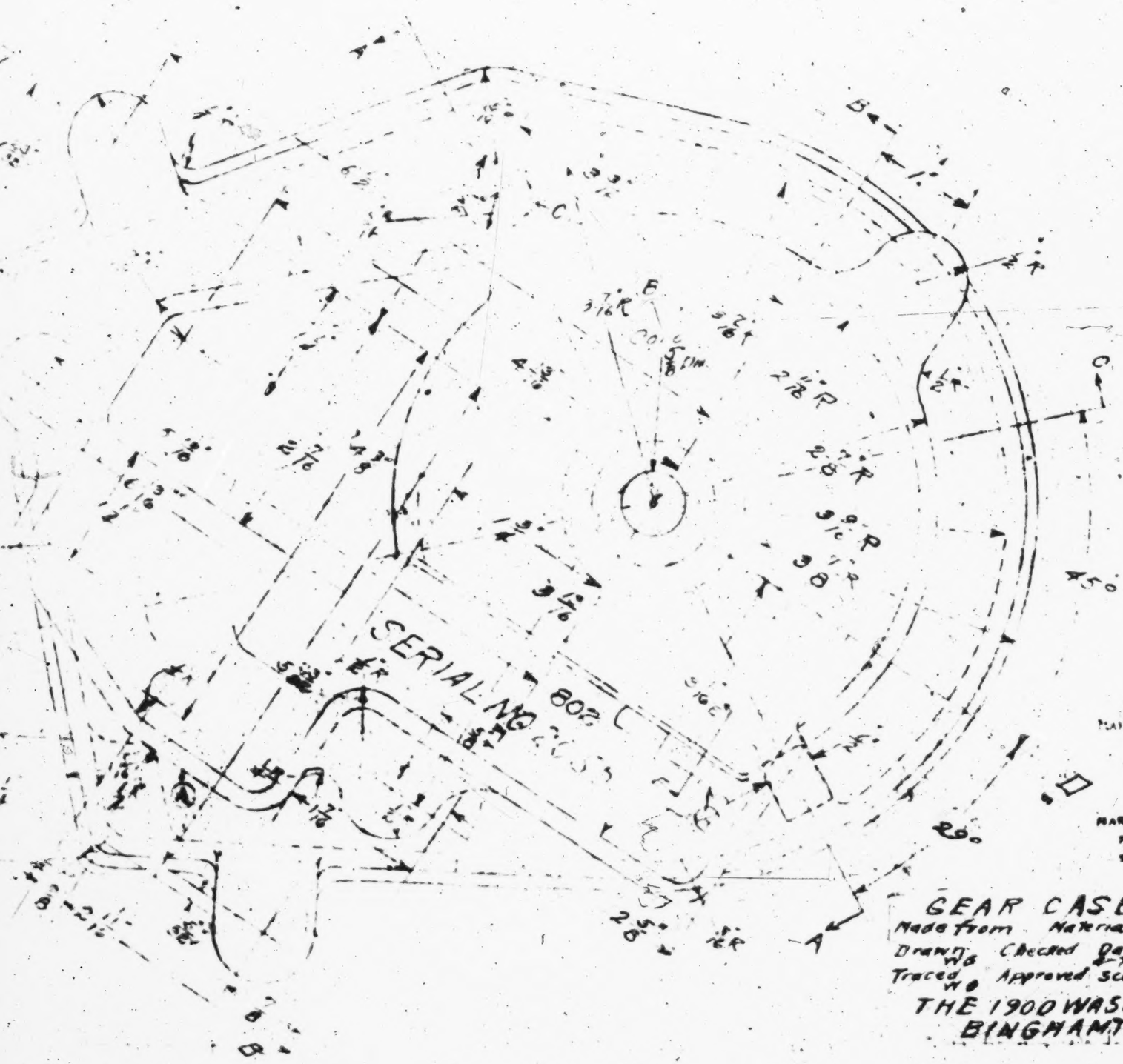
Consigned to Same Date —

Date Inspected

Routing Freight Collect on Chgs to D. L. & W.

	Your Order 1207 Our			Quoted List		Quoted Price	
				Qty	Total	Qty	Total
2	New Style Agitator Electrics, Form 4			61 25	153 75	54 27	253 11
	2 1036	2400858				Freight allowed 5.70	1 25 55
	2 1043	2400217					247 56
	2 1033	2400871					

DEFENDANT'S EXHIBIT No. 15



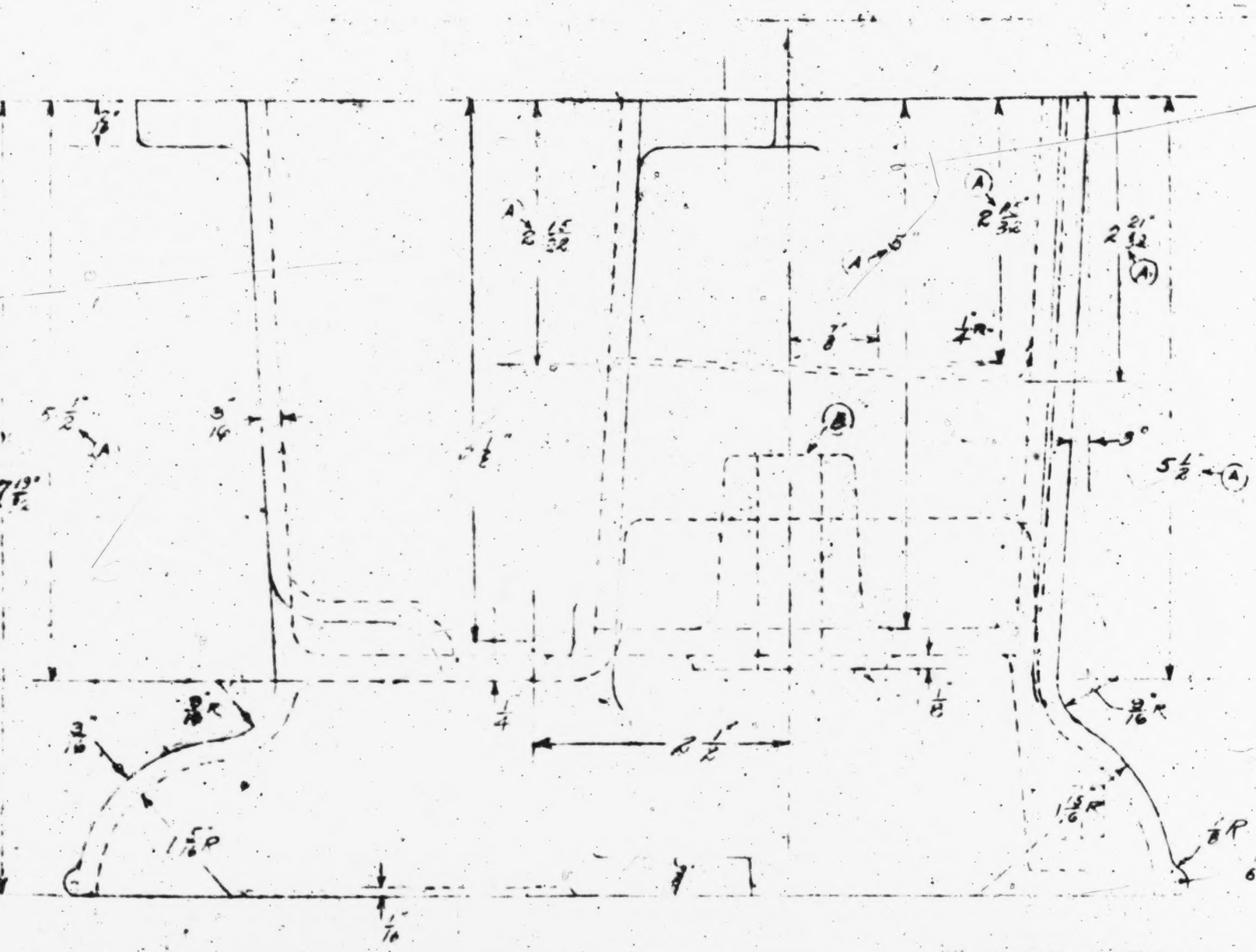
INSTRUCTIONS TO PATTERN MAKER
ON THE ORDER FOR THIS WORK IS C 662
PLATE 1 MASTER PATTERN OF WOOD
FOR A WORKING PATTERN OF Wood
FINAL CASTING TO BE OF Gray Iron
USE SHRINKAGE TO COVER ALL
DIMENSIONS ARE THOSE FOR FINAL CAST
MARK PATTERN
PART No 802 IN 1 SINGLE LOT
SERIAL No 20 TO 28 IN 1 DUPLICATE LOT

GEAR CASE (Casting
Made from Material CAST IRON
Drawing No Checked Date 8-7-21
Traced No Approved Scale 1/1
THE 1900 WASHER CO.
BINGHAMTON, N.Y.

Sheet No. 1
C 1/2 x 1/2 WG No of Sheets 5
B 1/4 x 1/2 WG
A 1/2 x 1/2 WG
Log Date By 802
Revisions Part No.

1347

Dec Ex. 16 page 2.



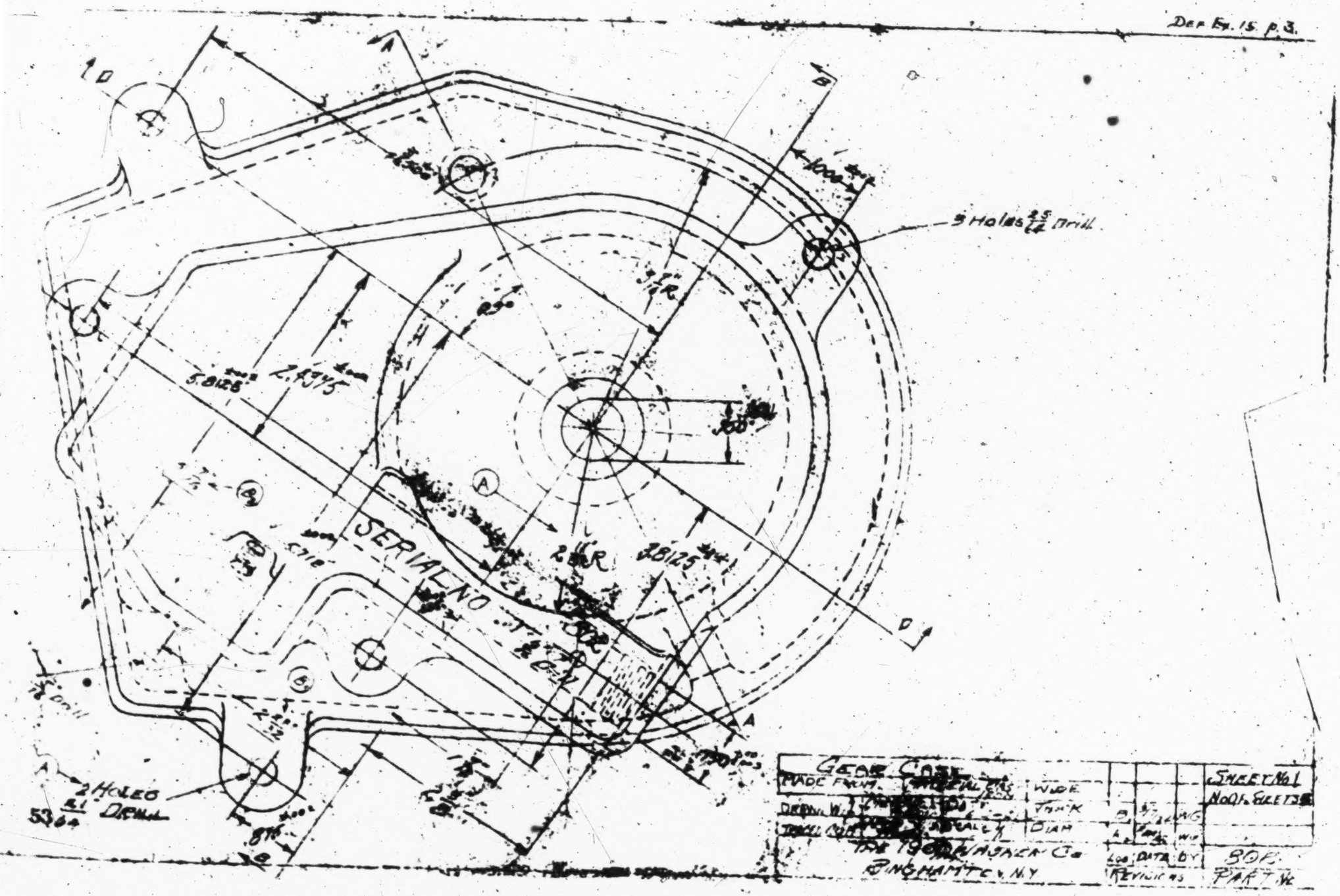
Side elevation parallel to central Plane thru line D-D.

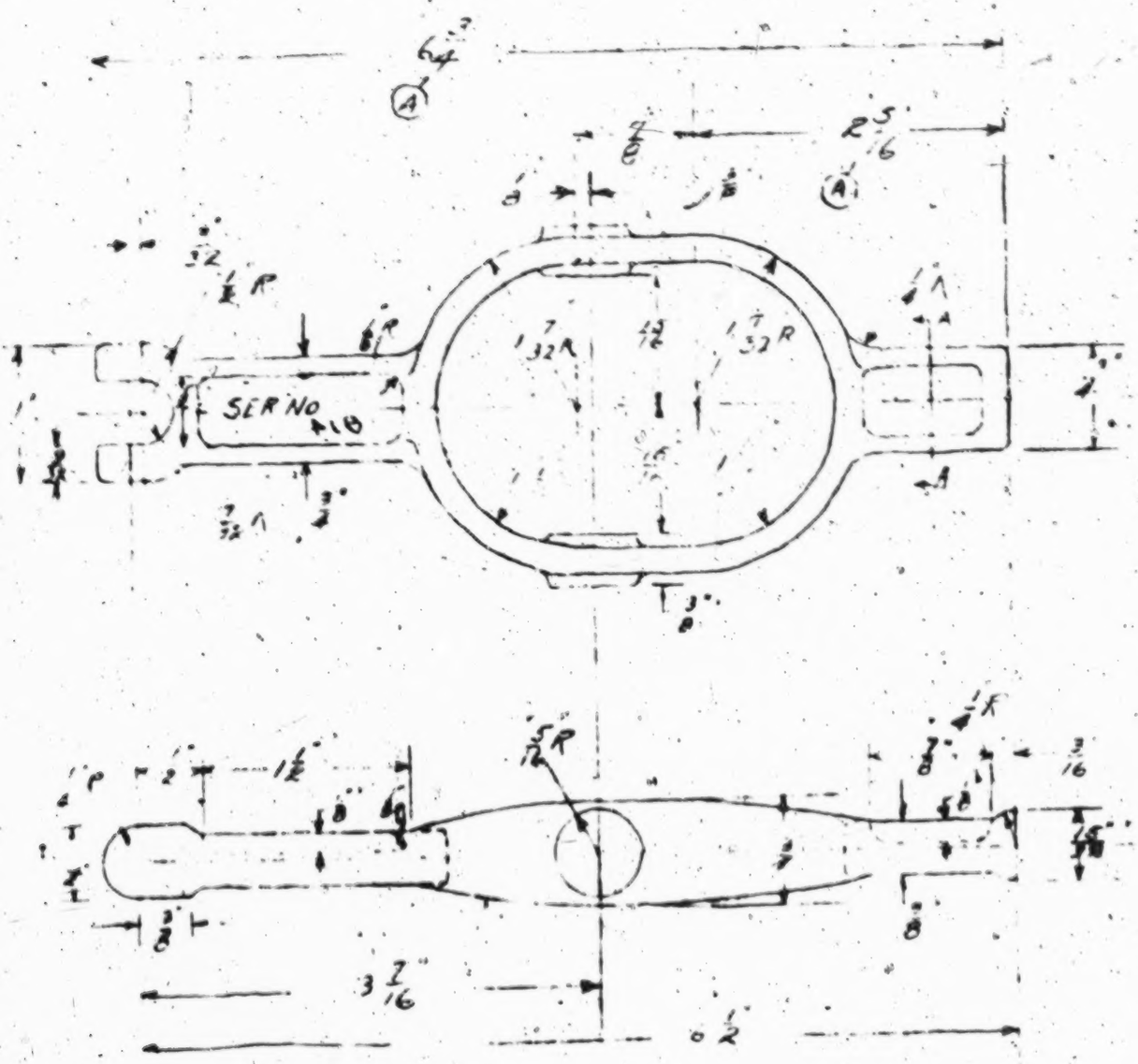
GEAR CASE (Casting
Made from | Material CAST IRON |
Drawn WG Checked DGV-81
Traced WG Approved Scale 1/1
THE 1900 WASHER CO.
BINGHAMTON, N.Y.

Sheet No 2
No of Sheets 2

B 5/16 22 WG
A, 11/32 WG
Loc Dsk By 802
Revisions Part No

Des. Ex. 15 p. 3.


1 D
5 Holes 25/64 Drill
5.8125
2.4375
2 HOLES 21/64 DRILL
SERIAL NO. T 80
GEAR CASE
WIDE
THICK
DIAM
SHEET No. 1
No. OF SHEETS
DATA BY
REVISIONS
PART No.



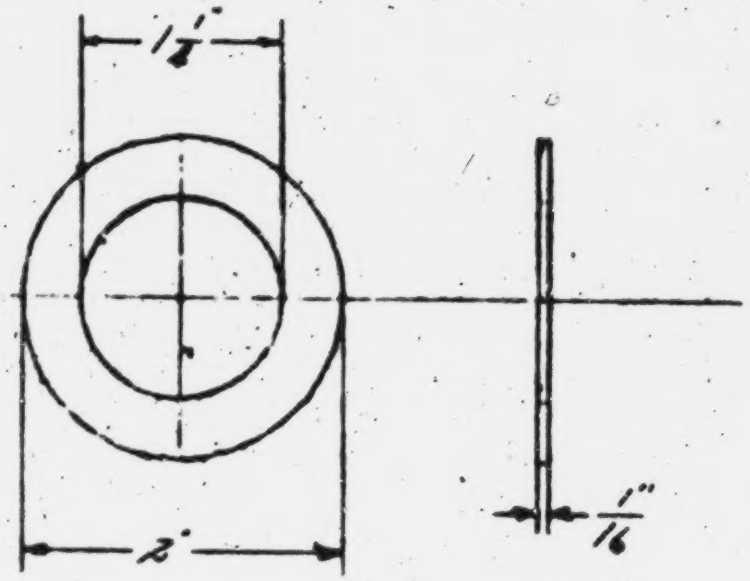
(Casting)

CONNECTING ROD CLUTCH LEVER

Made From	Material Cast Iron		
Drawn W.G.	Checked W.G.	Date	
Traced W.G.	Approved (Chief Engr.)	Scale	
THE 1900 WASHER CO. BINGHAMTON, N.Y.		A 41/32 WG. Let. Date By	814 Part No.
		Revisions	

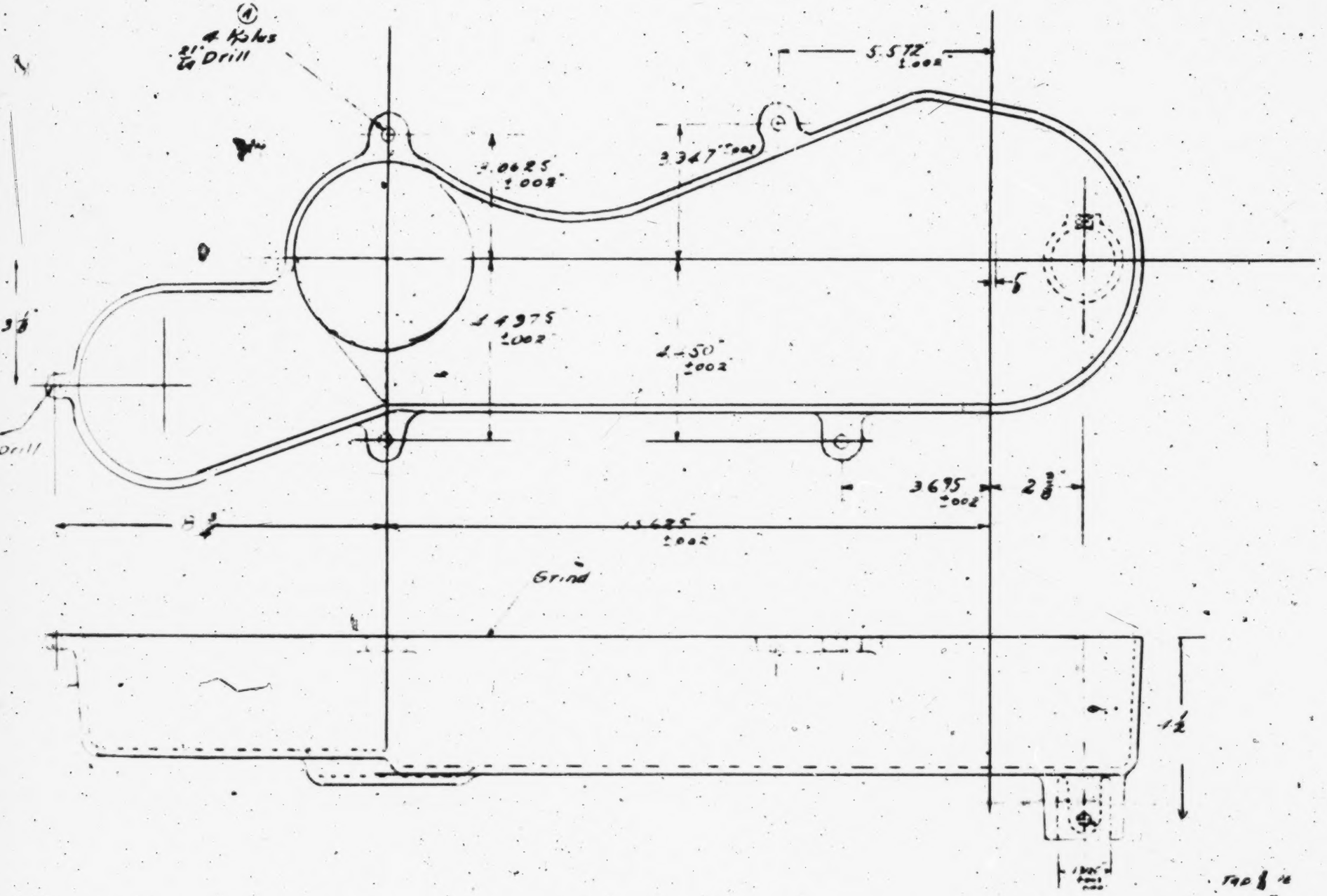
1350

DCE Ex 15 p 5.



TUB PACKING

THE 1900 WASHER CO.



DRIP PAN

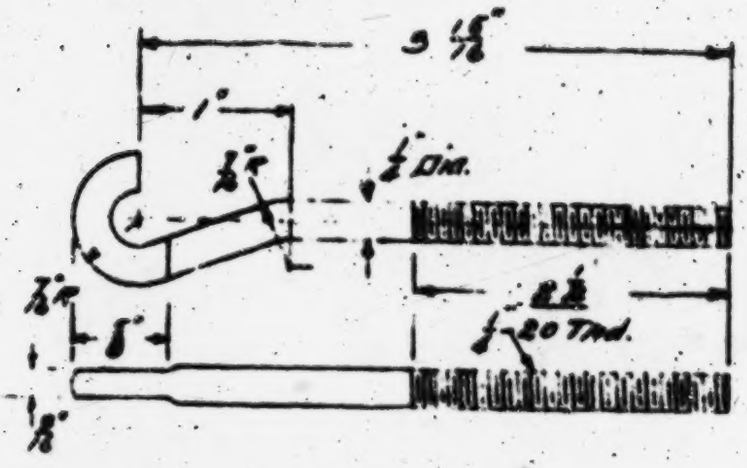
Made from	Material	Alloy
Drawn	Cast Iron	
No.	Date	Temper
Tracing	Checked	Scale 1/2
Approved		Dwg.

THE 1900 WASHER CO
BINGHAMTON, N.Y.

A	No. 22 WG	
1st	Date	By
Revisions		Roll No.

804

DRG. BK. 15 P 7.



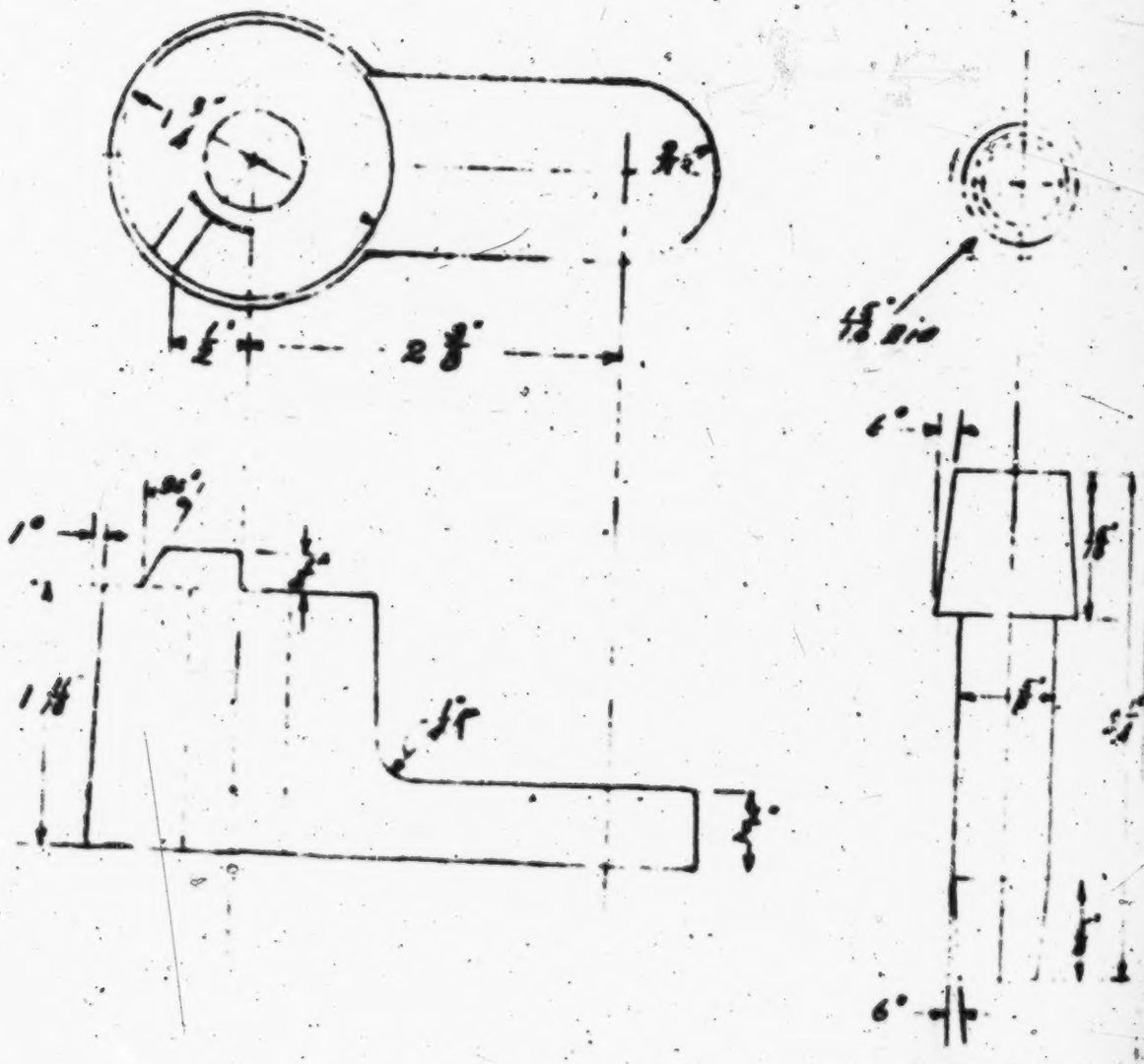
DEVELOPED LENGTH 5"

CHAIN M.C.A.

THE 1900 WASHER CO
BINGHAMTON, N.Y.

5"

1358



5 60

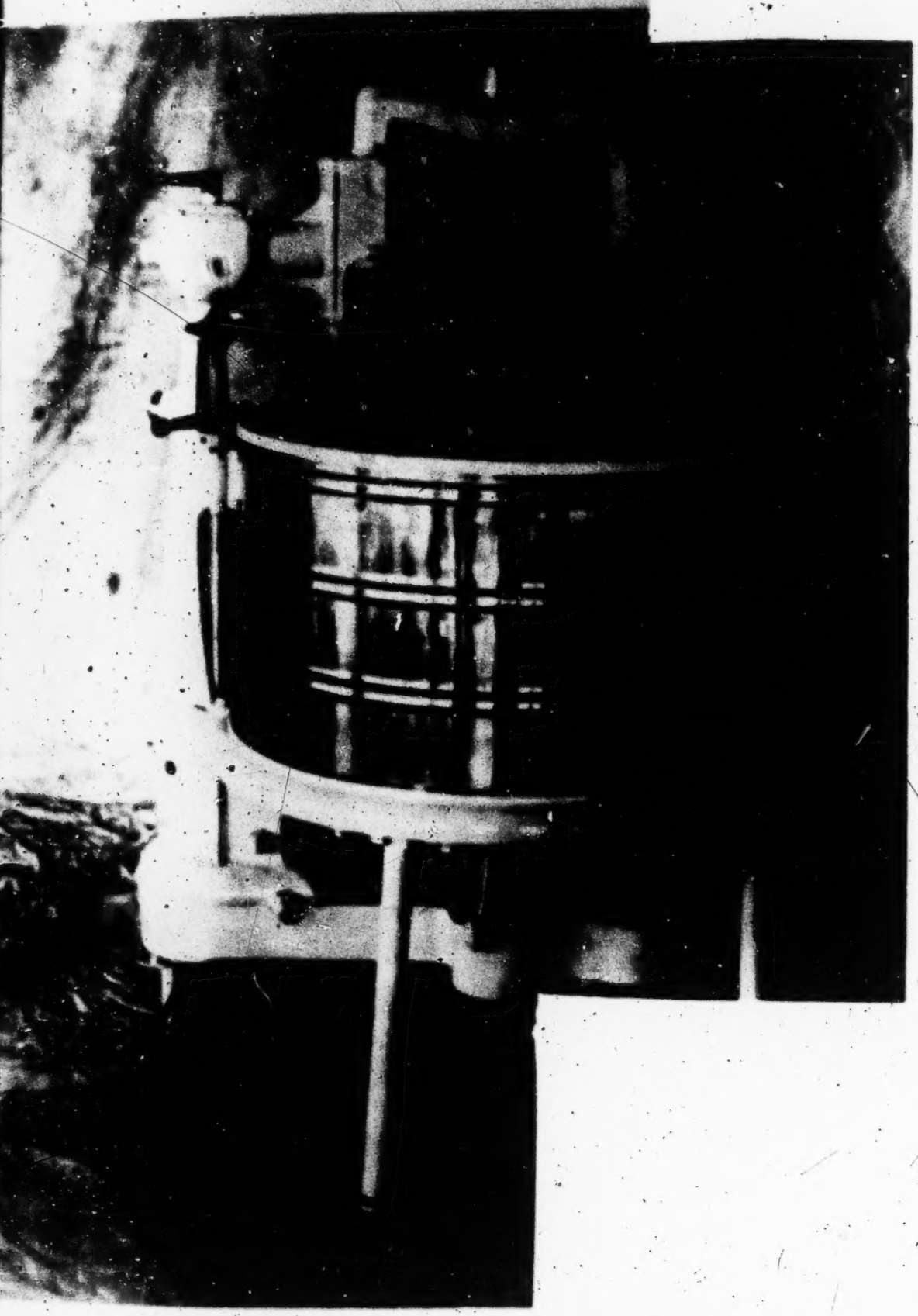
CRANK

CASTING

THE 1900 WASHER CO.
BINGHAMTON N.Y.

820

DEFENDANT'S EXHIBIT No. 18



DEFENDANT'S EXHIBIT No. 19.

Def Ex 19
1-26-18
H.S.

General Progress

Substitute for Agitator Electric Washer.

9/6/20 start.

9/9/20 Casting 2 brass from wooden pattern laid

9/10/20. Tried machine made from master patterns returned from about one week here by customer for trial.

9/10/20. Tried with aluminum plate agitator & wooden rings requires 2 H.P. motor.

DESIGN.

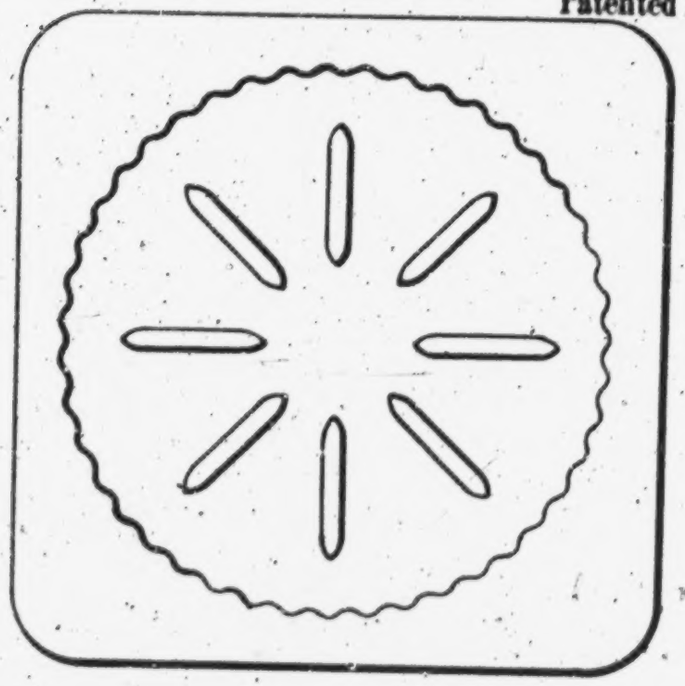
W. S. MILLER.

WASHING MACHINE TUB.

APPLICATION FILED JULY 8, 1918.

53,745. Patented Aug. 26, 1919.

Fig. 1.



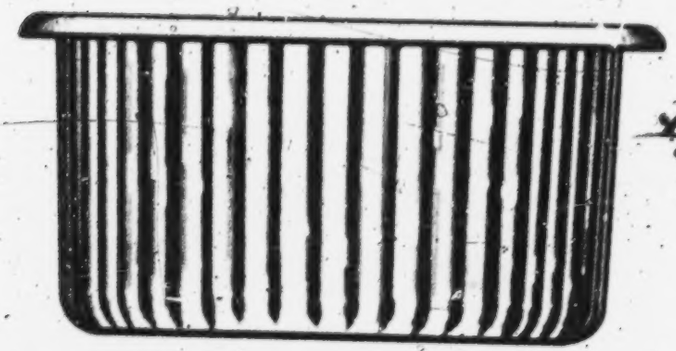
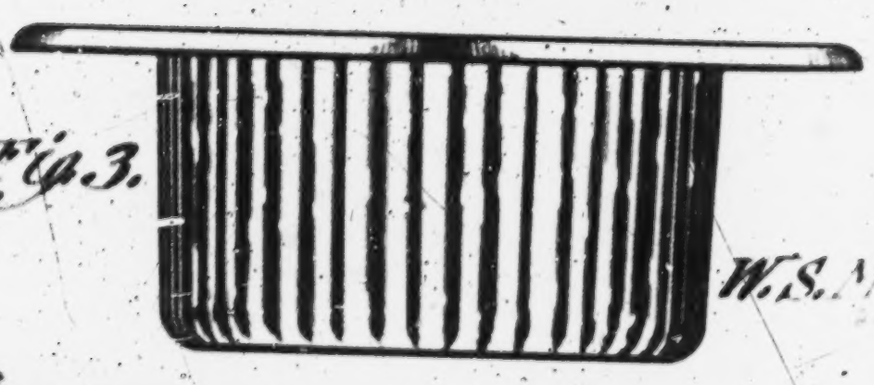


Fig. 2.

Fig. 3.



W. S. Miller
Inventor

Witness

J. R. Townsend

By C. A. Snow & Co
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM S. MILLER, OF MEYERSDALE, PENNSYLVANIA.

DESIGN FOR A WASHING-MACHINE TUB.

33,745. Specification for Design. Patented Aug. 26, 1919.

Application filed July 6, 1916. Serial No. 107,889. Term of patent 3½ years.

To all whom it may concern:

Be it known that I, WILLIAM S. MILLER, a citizen of the United States, residing at Meyersdale, in the county of Somerset and State of Pennsylvania, have invented a new, original, and ornamental Design for a Washing-Machine Tub, of which the following is a specification, reference being had to the accompanying drawing, forming part thereof.

Figure 1 is a plan view of a washing machine tub, showing my new design.

Fig. 2 is an elevation of one side of the tub.

Fig. 3 is an elevation of the tub showing one corner and two sides thereof.

I claim:—

The ornamental design for a washing machine tub, as shown.

WILLIAM S. MILLER.

Witnesses:
WILLIAM H. BLACK,
J. MILTON GUGGEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

Read and Remember these Important HAAG *Features*

Arrows here and [illegible] broken without [illegible] through entire spoke [illegible] by hand calculation.

Offering guide bars shown with extra heavy [illegible] rubber.

Cast gears have been eliminated. Malleable and cut gears only are used.

Choice of either cast or metal cylinder. Either cylinder is of best grade obtainable.

Cast fulcrum construction on one side of the cylinder in one complete unit. Cannot bend. Such good care was taken to make it possible to run all gears in a bath of oil.

All moving parts are safely out of sight behind the hinged cabinet door.

Wringer can be lifted off for storing in small space or shipping.

A straight up lift removes the cylinder. No twisting to get it in or out of the tub.

Cylinder operates one complete revolution forward, then reverse. Entire mechanism, both cylinder and gears, practically noiseless. Cylinder can not stop on "dead center."

The special arrangement of the agitator ribs, inside the cylinder gently tumbles the clothes without wadding or winding—leaving the materials at all times in a position that allows the soapy water to go through every inch.

The HAAG motor is ½ h.p., 1750 r.p.m., sold remains, splash proof type. Built larger than necessary to accommodate overloads. Equipped with V belt drive, preventing damage or burning out of motor. Thoroughly insulated to protect the frame. Needs oiling only occasionally through accessible grease caps.

Infinite pains have been taken in perfecting the refinements of detail, with the result that, as a completed device, the HAAG Cabinet Electric can be safely chosen and relied upon to give service far above the ordinary and for many years to come.

HAAG BROS. CO.
PEORIA, ILL.

The HAAG
CABINET ELECTRIC
Washer

Wash morning callers do not worry the housewife who owns the HAAG. For there is pride in not only owning—but showing—this better cabinet electric washer. Its appearance is a credit to the most model kitchen or laundry. Clothes come out clean, snowy-white and wholesome. On the floor, under the washer, are found no oil spots or water to be ashamed of. And you can visit with your friends while the HAAG quietly and thoroughly does the wash. You will be as proud of your HAAG as you are of the best piece of furniture you have. From now on make it "HAAG" DAY — not wash day.

The HAAG

CABINET ELECTRIC WASHER

DEFENDANT'S EXHIBIT No. 61 1358

The HAAG has the *one vitally important feature* to look for in a CABINET Electric WASHER

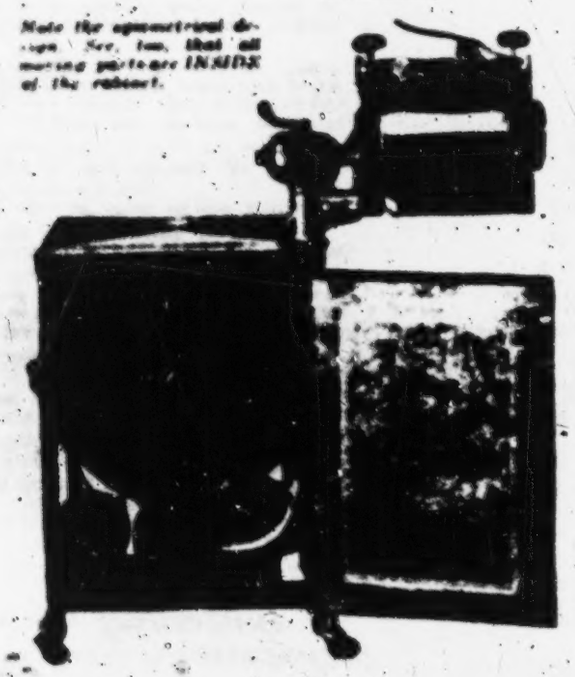
That feature is not attractive design or beautiful finish; it is not noiseless gears and cylinder; it is not even the speed with which the machine will finish the weekly wash——

These features are very important and the HAAG has them all. Yet they are secondary to a washer's greatest value—secondary to its ability to keep these excellent qualities through many long years of hard service.

The perfection with which it operates in future years (as it does the day it is turned out of the factory) is the one big quality that distinguishes and sets apart the HAAG Cabinet Electric.

Note the simplicity and compactness of the trouble-proof driving mechanism.

Note the symmetrical design. See, too, that all moving parts are INSIDE of the cabinet.



You have a right to buy an electric washer as you would a good piano, with the expectation of its being an important part of your family life for many years to come. And those careful men and women who select a washer only on the basis of what they are going to get in trouble-free performance, in years to come, choose the HAAG Cabinet Electric.

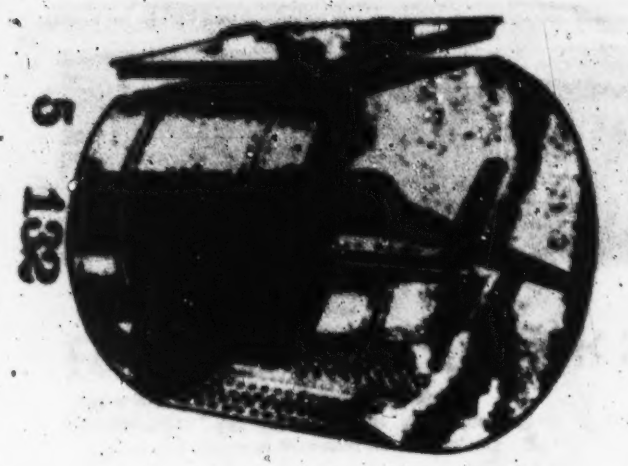
The SIMPLEST of ALL!

Press a button on the washer to start or stop the motor. A handy lever throws the cylinder in or out of gear. Belt never needs shortening for the tension pulls against two heavy coil springs that keep the belt tight. All gears run in a bath of oil that needs renewing only once every three or four years. Wringer locks over washer, basket or rinse tube; takes heaviest blankets or lightest materials equally well; its rolls can be instantly released in case of "bunching." And above all else the HAAG Cabinet Electric does its work so thoroughly as to make a wash board unnecessary even for the worst of all soiled clothes.

Ten years' time has been necessary to develop and perfect the HAAG Cabinet Electric Washer for you. Its price is no greater than that asked for lighter, less efficient machines. It will serve you better—and longer—than you expect.

HAAG BROS. CO. *Manufacturers of* WASHING MACHINES *since 1913* **Peoria, Ill.**

5 131



Why the HAAG *Oscillator washes*
Cleaner *with No Wear*

The Haag Oscillator does not rub, does not pull, tear or twist. It washes clean by gently forcing hot, soapy water through the fabric, between each and every thread, with exactly the same motion ocean waves gently wash a sandy beach.

In and out — in and out — the water goes to and fro from one end of the tub to the other.

40 times in each minute the water goes one way — 40 times the other way — making a total of 80 movements in every minute

No dirt can escape such a thorough cleansing. No material can be so fine as to be injured by the gently, swaying water.

Clothes do not have to be rubbed to be cleaned — all odors, dirt and grease will fade away like magic in the Haag Oscillator.

SPECIFICATIONS *of the New* HAAG *Oscillator*

Height 35 inches to top of tub—an easy lift for clothes.

Height to bottom of wringer, 37 inches.

Lock seamed tub of 16 ounce finest grade copper, tinned inside.

Tub 22½ inches in diameter by 18 inches long.

Opening in tub 11 x 17 inches—the right size for putting in and taking out clothes.

Capacity 6 sheets or their equivalent.

Only 22½ inches x 36 inches of floor space required.

Large casters makes moving from one place to another easy.

Motor driven equipment, direct drive, oversize motor; carries full manufacturers guarantee.

Machine cut gears—thru out entire driving mechanism.

Spur gears only—no worm gears to cause trouble.

Angle iron frame 1½ x 1½ x ⅛ inch, providing sufficient strength to stand all strains.

High speed gears are cut Helical to insure quiet running.

Rust resisting steel cabinet

Swinging, reversible, 12 inch wringer locks in five positions.

Heavy brass drain spout with threaded hose connection.

Finished in silver-gray enamel. Easy to keep this best of all oscillator laundry machine spotlessly clean.

1360

Compare the "HAAG"

with others

ONLY by comparison, piece by piece, can the new HAAG Oscillator demonstrate its leadership—its many superiorities—over any and all other models.

Oscillator type—the makers of all on low Imperia, valuable linens, silk lingerie, sheer laces, organdies and crepe de chines—yet efficient and powerful enough to get all the dirt out of blankets, rugs, work clothes and heavy underwear.

The Haag Oscillator does not rub. Gently forces hot soapy suds through the fabric. The wave-like motion of the rub avoids all snagging, knotting and twisting.

In addition to its efficiency, its clean washing, its assured long life, comes the attractive design that demonstrates to your friends and neighbors your good taste even to washing appliances. For the Haag Oscillator is the most beautiful machine alive.

And the absence of all splash up; the absence of objectionable work on the part of your dealer and the little electric power required to drive this heavy washer makes the Haag Oscillator the most economical laundry machine made.

The many years of genuine service it will provide will prove this conclusively. Its first cost is less than that of others when "piece by piece" comparisons are made.

Don't Delay—Own the "HAAG" Oscillator Today

You are paying for the Haag Oscillator whether you buy it or not. Expensive public laundry work; exorbitant wages for domestic labor; fine wearing apparel severely ruined by inefficient machines—all these expenses added together would quickly amount far higher than the low price of the Haag Oscillator.

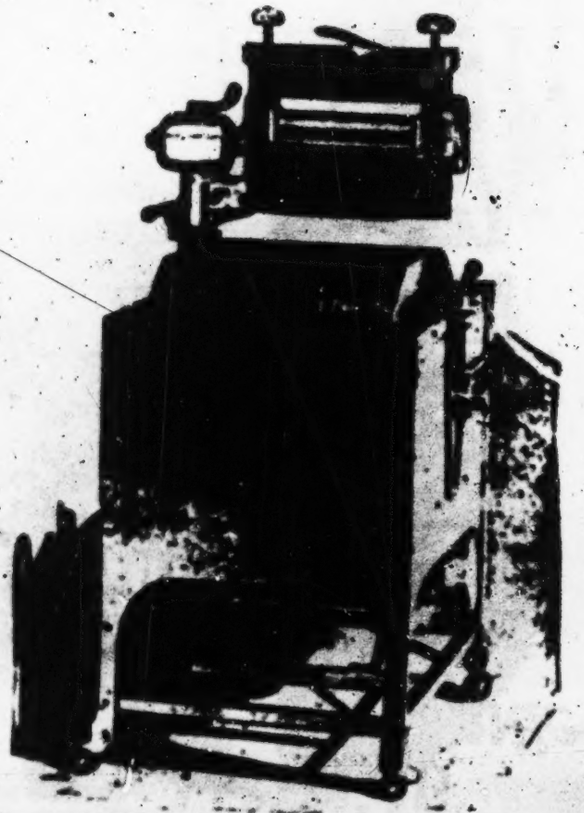
In the Haag Oscillator you get the finest laundry machine you can own, priced at a figure no higher than that asked for an ordinary washer. Should any part prove defective any time within one year from date of purchase it will be replaced entirely free of charge on the return of the defective part to our factory. The motor is warranted for one year. This is our guarantee.

Your dealer can tell you more about the Haag Oscillator. Ask him. If he does not have this superior laundry machine on his sales room floor tell him to write to

HAAG BROTHERS COMPANY, Peoria, Illinois

The Haag Oscillator—The only machine—motor hanging as part of the frame. Electricity can not pass into the metal machine and waste power.

The enormous Haag Factory—a complete unit—erected in 12 years of growing, satisfactory, to laundry machines.

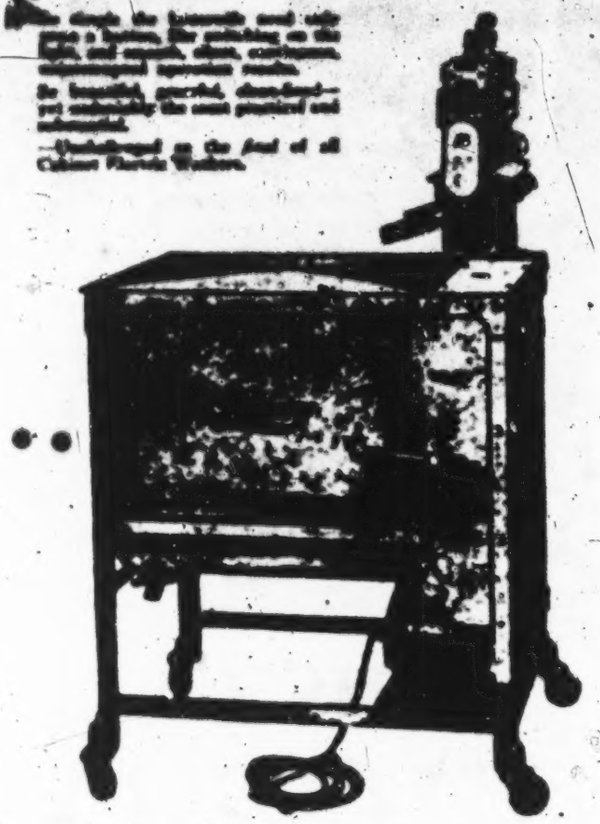


1931

The

Haag

1934 Cabinet Electric Washer



HAAG BROS. CO., Peoria, Illinois

HAAG

COMPARE THESE WITH OTHERS

the

Haag

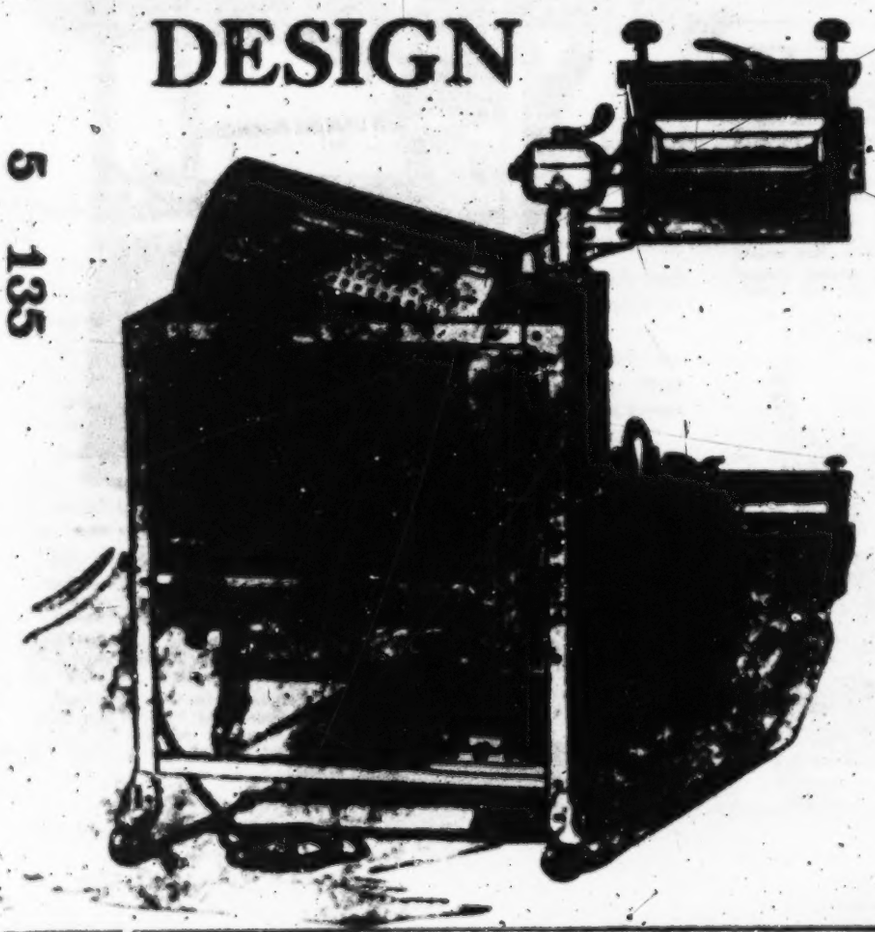
is a
GUARANTEE
to every Housewife

1362

because of its

ABSOLUTE SIMPLICITY *of* DESIGN *and* OPERATION

5 135



this HAAG Cabinet Electric is the *finest* machine of all—the one that can be depended upon to give many years of uninterrupted service and satisfaction—guaranteed by the manufacturer; unhesitatingly recommended by the dealer to his best customers.

Without sacrificing mechanical perfection the HAAG is acknowledged the most beautiful of all washers.

The HAAG direct gear drive has few working parts, is sturdy and built to withstand years of hardest service.

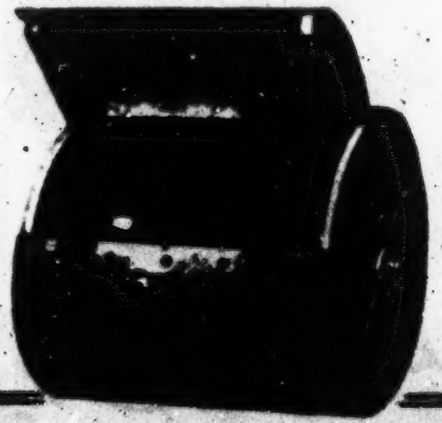
The HAAG Swinging Wringer reaches washer, rinse tubs and bushes; operated individually or at the same time as the cylinder. Wringer rolls instantly release if clothes become bunched.

A handy lever throws the cylinder in or out of gear. All gears run in a bath of oil that needs renewing only once every 2 or 3 years. Rarely does the HAAG oversize motor require attention.

And for this better washer (the development of engineering skill covering more than 12 years actual manufacture of washing equipment) you are asked to pay no more than the price of an ordinary washing machine.

BACK *and* FORTH—
UP *and* DOWN

The HAAG cylinder [illegible] of rust proof wire or hard maple wands has special [illegible] agitator ribs that gently tumble the clothes without washing or winding. Finest lingerie can not slip or tear; heaviest work clothes and blankets cannot bunch; clothes are always free to permit the cleansing suds to go through thoroughly each and every thread) every inch of the material. The HAAG cylinder is unlike that of any other—it cleans more thoroughly, more rapidly and lasts longer.



HAAG BROS. CO.
Peoria, Illinois

HAAG IDEAL

5 136

Model 6B-E—Electric
Model 6B-P—Power

POINTS OF HAAG SUPERIORITY

TUBS OF GREATER CAPACITY. Tubs, being brought closer over and allow deeper corrugations, making for more thorough washing.

Revolving Wringer. The wringer, inclosed in metal, covering all gears and providing complete safety, is built better and stronger than every other make. It has a patent lock, by which it can be fastened at any desired point. Has automatic safety release for quick use in case of overload.

Angle Steel Platforms made of one piece. The steel platforms are practically indestructible, and are built stronger than necessary to take care of any possible emergency.

Special Draining Device. Water runs into and also evaporates without spilling and without tipping the tub. Threaded spout for hose connection.

Motor and Drive Wheel, on electric models, drive under the washer and out of the way and protected. Motor is built extremely heavy and strong. Waterproof construction assures freedom from motor worries and service.

HOUSEWIVES APPRECIATE THESE "HAAG" FEATURES:

(1) The fact that the mechanism is under the tub provides perfect safety, makes it unnecessary to lift heavy driving mechanism when raising the lid.

(2) The "Haag" V shaped belt does not stretch, slip or break.

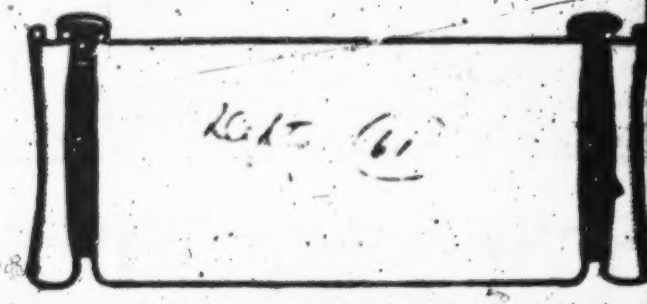
(3) High legs make cleaning under the washer simple. Extra heavy large steel Hamick casters make the "Haag" easy to move, even when filled.

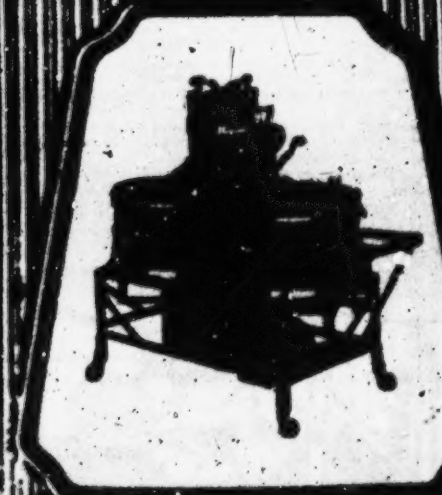
(4) Silent and smooth running gears.

(5) Attractiveness and beauty made possible by the natural wood finish tubs and bright aluminum bronze frame work.

AND HUSBANDS APPRECIATE

(1) The lasting, sturdy tub. (2) Heavy, substantial steel frame. (3) The short drive, direct from motor to belt pulley, that eliminates wear and tear, guarantees long life. (4) The little oiling necessary to keep the "Haag" in finest running order. (5) Covered gears (both washer and wringer) that eliminates worry. (6) And the name "Haag" that guarantees the washer is right (every one backs up over 14 years' successful manufacturing records.





The Haag
OVERHEAD DRIVE
Washers

1364

New

HAAG

Washing-thru-with-the HAAG—

ALL CLOTH, like ordinary window screen, is made up of small squares, made by interlaced threads. Look at any piece of goods thru a magnifying glass.

You've noticed on your screens, that dirt collects in the tiny squares—not so much on the surface. To remove this dirt you must force water thru the screen, and not merely rub over the surface.

It is the same with cloth. It is in these squares that dirt and grime collects. For proper cleansing, the same principle must be applied—water must be forced thru the meshes of the fabric.

The HAAG Twin, HAAG IDEAL and HAAG BLUE RIBBON are all on the same principle—the time-tested and proven "dolly" type.

Back and forth—100 times each minute—the cleansing suds are forced thru—in between every thread of the clothes.

Dirt and grease disappear like magic. Clean, spotless clothes emerge, without stain, without labor, and without wear.

No dirt can long resist the thorough cleansing of the HAAG BLUE RIBBON (single tub), HAAG IDEAL (large bench) or HAAG TWIN (double tub)—so effective, and yet so capful that fine and soft materials are washed with complete safety.

It Is Better To See The HAAG Before You Buy, Than To Wish You Had!

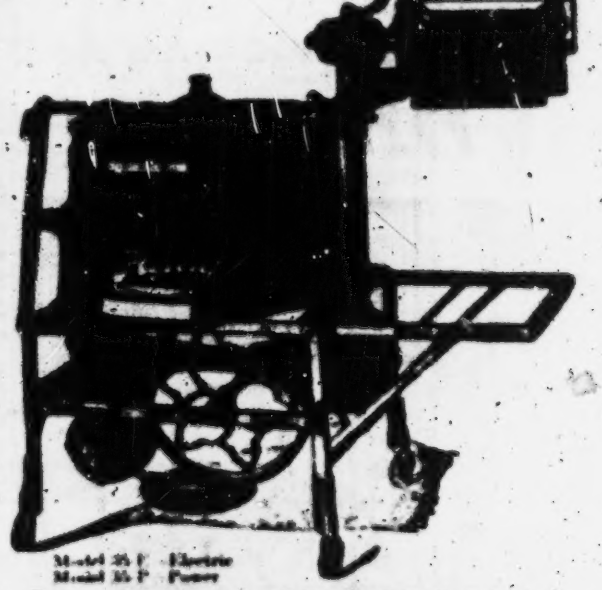
YOU BE THE JUDGE!

Model BF—Power

HAAG TWIN

THE HAAG TWIN MECHANISM is of the simplest design and may be understood and operated by anyone. A child can safely do the operating. The right amount of the best washing suds is easy to make the HAAG Cleans the cloth without rubbing the clothes.

An unusual feature of the Haag Twin is the fact that it has TWO CONTROLS. The washing mechanism can be changed at will to motion either synchronizing or varying as desired. Also, as the tubs are independent of each other, one tub may be changed without having the lid thereon open in the way. Or, if for any reason, the operator is inconvenienced but wishes to finish washing, both tubs can be changed and the tub remain closed, returning the heat to the water. The features applies to all HAAG Overhead drive washers.



Model 35 E—Electric
Model 35 P—Power

HAAG BLUE RIBBON

EACH HANDLE used in operating the washer is located in the most convenient position. It is easy to operate and there is no complicated system of gears and levers to adjust. Suitable set of platform throws entire washing mechanism in or out of gear. Handle no stronger within quick reach of hand reverses or stops the rolls. Raising the lid also throws the dolly out of gear so it does not agitate. Lowering lid starts it automatically without touching control handle.

We use an unusually heavy, large size tub. It is made of 14 gauge stock with sides measuring full 11½ inch thick and the bottom 1 inch thick. When you compare these dimensions with the thin sides and bottoms of regular ½ inch tubs used on most washers, you will be greatly impressed with the advantages of the heavy tub. They are not only of greater capacity, but they have grooves by deep corrugations in the sides and bottoms, which provide an additional and important washing feature. Garments roll on the HAAG tub outwears two ordinary tubs.

1366

DEFENDANT'S EXHIBIT No. 62

SALES JOURNAL

JUN. 1956

INVOICE NUMBER	DAY	ACCOUNT	ACCOUNTS RECEIVABLE	V	DEBITS: GARMENTS	DEBITS: PARTS	DEBITS: SUNDRY	CREDITS: GARMENTS	CREDITS: PARTS	CREDITS: SUNDRY		
			7893 -		13 29 97	10 166	33 763	77 50	20 93	29 58		
2755	10	Madison Elec Supp Co	160 -	✓	160 -							
56		" " " "	62 -	✓	62 -							
57		" " " "	1796	✓	1796							
60		Turner Mfg Co	72 -	✓			72 -					
37		Wynberg Textile C.O.D.	864	✓					864			
61		Fred Schlegel Jr	81 -	✓				81				
62		Le Roy Elec Lefel Power to Le Roy Elec Co	72 -	✓			64 -		15 -	57 -		
98	11	Cash Mfg Co	35	✓		35						
93		Huber Broom Mfg Co	16	✓		16						
95		" " "	1446	✓		1446						
97		" " "	98	✓		98						
88		Lucky & Co	1440	✓	1440 -							
92		" "	540	✓	540 -							
93		" "	199	✓		199						
96		" "	165	✓		165						
66		Elec Washing Mach Co C.O.D.	711	✓		711			711			
64		A B Sounds "	140	✓		140			140			
67		Elec Laundry "	197	✓					197			
68		Housing Hdwe Co "	9 50	✓					8 50			
69		O E Myers "	126	✓								
70		Moonlight Hdwe Co "	36	✓					36			
71		" " "	42	✓					42			
77		C F Schafer Hdwe Co "	711	✓					711			
78		Fairmont Dept Store "	90	✓					90			
90		Peerless Relief Assoc. Comptr	62 -	✓								
99		County Clerk of Pierce Pierce Neb	237	✓					237			
2815	14	Rhodes Meyer & Hardware Hdwe Co	191	✓		191						
06		Lane Mfg Co	140	✓		140						
10		" "	759	✓		759						
11		Huber Broom Mfg Co	85	✓		85						
13		" " "	99	✓		99						
17		" " "	702	✓	702 -							
07		Lucky & Co	178	✓		178						
03		" "	1284	✓	1284 -							
04		" "	3 17	✓		8 17						
05		" "	77 -	✓	77 -							
07		" "	1560	✓	1560 -							
77		" "	75	✓		75						
03		H C Roberts Elec Supply Co	65	✓		65						
00		J Hunter Hdwe Co	80	✓		80						
09		Saunders & Theard	29	✓								
16		Myers & Chapotte Sykes, Inc	74	✓					19			
81	15	Hastings Equipment Co	1930	✓	1930 -							
31		Lucky & Co	750	✓		750						
32		J Hunter Hdwe Co	6 30	✓	6 30							
83		" " "	77 -	✓	77 -							
36		E W Espy & Son Coal sale	776	✓					776			
86		Allenger Hdwe Co		✓								
38	16	Hastings Equipment Co	76 76	✓		165	73 66					
dd		Lucky & Co	44	✓	44							
		$ 130	78 04 76		45 85		31 31	77 50	64 24	29 58		

Choice of Copper or Wood Tub
WITH THIS FAMOUS "HAAG NU-WAY" WASHER

Both are splendid washers of the thorough washing "dolly" type—omitting no convenience, no comfort.

Both are efficient, perfect in operation, and win the enthusiastic approval of every owner.

A *choice* between the two (*Copper* or *Wood*) is one of taste alone—not of one's dominance over the other.

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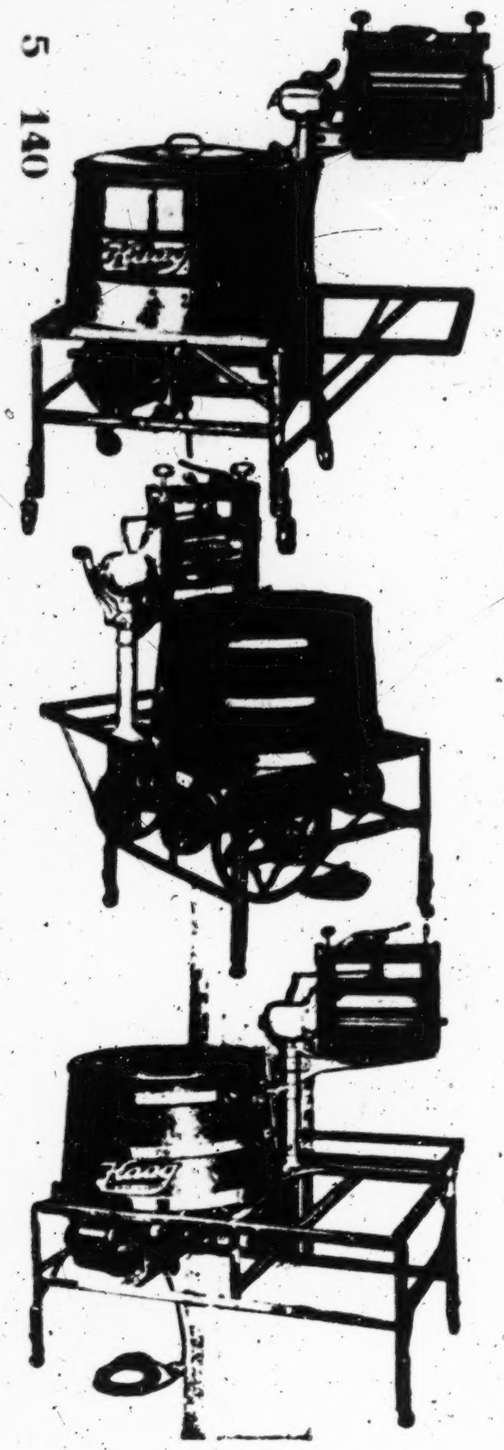

"Haag Nu-Way" (Copper Tub)
Model 60-E

Here is the most modern of all "dolly" type washers—a glistening full copper tub—an attractive addition to any laundry equipment. Appreciated by housewives because of its cleanliness and the ease with which it is kept bright and new by merely dusting with a cloth. Appreciated, too, for its washing speed and thoroughness. Tinned inside prevents rust. Its smooth interior never snags or tears clothes. The "Haag Nu-way" COPPER Tub Washer has ALL the advantages shown in this circular. A washer you will be proud to own and show to your friends.

"Haag Nu-Way" (Wood Tub)
Model 10-E

Neat, compact and attractive. Tub finished in natural wood color, all castings aluminum bronze finish. Folding tub rest permits storing this style in a small space when not in use. An easy lift for clothes and water; drains itself without tipping; especially adapted for small laundry rooms and homes where the washer must not occupy much space. The total absence of mechanism on the lid permits the top of the washer to be used for storag between wash days.

"Haag Nu-Way" (Wood Tub)
Model 20-E

Mechanically the same construction as all "Haag Nu-Ways" except with full length permanent platform for rinse tub and folding basket rest. Note particularly the strong angle iron frame and sturdy construction in the full swinging wringer assembly. In the "Haag Nu-Way" with double tub platform (as in all "Nu-Way" washers) the name "Haag" is an unfailing guide to a long lasting, satisfaction-giving washer—for every one must back up our ten year's record of successful manufacture.

See the "Haag" Dealer

If he happens to be out of the particular "Haag Nu-Way" you want, write us and we will see that you are supplied promptly.
From now on make it "Haag Day"—not "wash day."

Washes Sheerest Lingerie or Heaviest Blankets

Two Agitators Are Sent With Each "Haag Nu-Way"

Both types self adjusting to large or small washings. Flat agitator especially adapted to dainty fabrics. Gently agitates water and clothes without damage to finest materials.

Peg agitator grips washing firmly. Especially adapted to heavy materials and soiled clothes.

Owners claim "Haag Nu-Way" tubs outwear TWO ordinary tubs. Heavier side walls and bottom, deeper corrugations, greater capacity (note comparative cut).

A touch of the safety lever instantly releases the wringer in case of necessity. (All gears and wheels enclosed, when assembled.)

The "Haag Wringer"

Revolves, stops and locks rightly over washer, rinse tubs or basket. Has reversible drum board. The "Haag" wringer makes it unnecessary to wring out by hand the heaviest blankets or rugs. Its eleven inch rolls and adjustable tension are appreciated by housewives. With the "Haag" you wring and wash at the same time or separately.

The "Haag Motor"

Built oversize to accommodate heavy washings and to start the washer under heavy load. Eliminates burned out fuses. Waterproof construction does away with motor worries and service.

HAAG BROS. CO., Peoria, Ill.

Established 1910

DEFENDANT'S EXHIBIT No. 63

Haag

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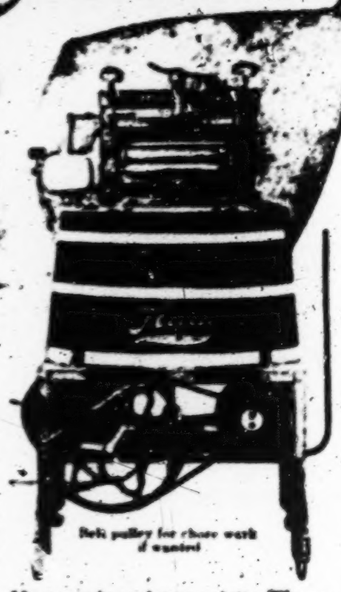


Housewives Appreciate These "Haag" Features

(1) The fact that ALL the mechanism is under the tub provides perfect safety, makes it unnecessary to hit the driving mechanism when raising the lid.

(2) The "Haag" V shaped belt **does not stretch, slip or break.**

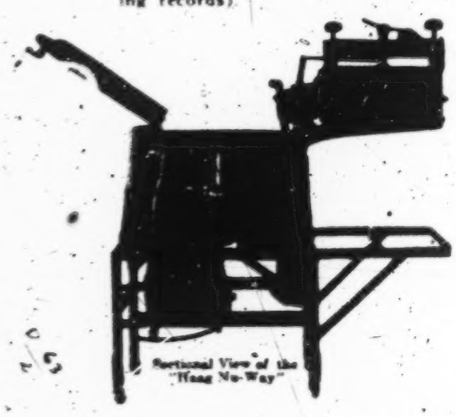
(3) High legs make **cleaning under the washer simple.** Extra heavy large steel casters make the "Haag" **easy to move, even when filled.**

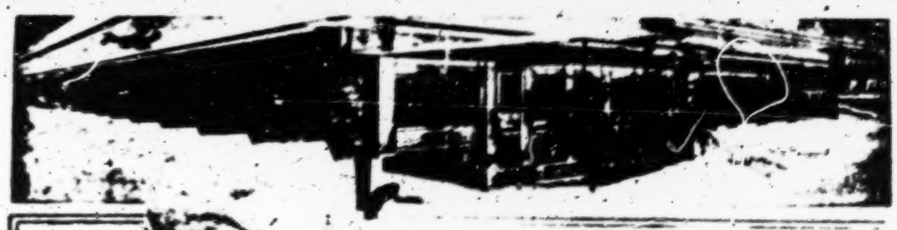
(4) Silent and smooth running gears.

(5) **Attractiveness and beauty** made possible by the copper or natural wood finish tubs and bright aluminum bronze frame work.

and Husbands Appreciate

(1) The lasting, sturdy tub. (2) heavy, substantial steel angle iron frame; (3) the short drive, direct from motor to belt pulley, that eliminates wear and tear, guarantees long life. (4) The little oiling necessary to keep the "Haag" in finest running order. (5) Covered gears (both washer and wringer) that eliminates worry. (6) And the name "Haag" that **guarantees the "Nu-Way is right** (every washer backs up our ten year's successful manufacturing records).





"Haag Nu-Way" Guarantee

"Haag Nu-Way" Has Good Housekeeping Star—IT PROTECTS YOU

Tested Approved Good Housekeeping Institute

Triple Protection

HAAG BROS. CO., PEORIA, ILL.

For the woman who says: "I don't need a machine"

If you do your own washing, you spend most of washday in soaking, boiling, rubbing, rinsing, wringing, lifting, carrying, perspiring, chilling and rushing about, till at night you are deathly tired. What a strain on health and youth! Consider the cost. Give the Haag one hour and your clothes will be immaculately washed, without labor, cheaply.

If you hired your work done, just figure the wages, food, the work in getting your wash ready for the laundress. The Haag costs about 4 cents a day. Where is the saving? Besides the Haag saves the wear and tear of clothes done by the washboard.

And you who send your clothes to the public laundry, do you realize that your choicest clothes are washed in the same filthy water with those of thousands of other people—that stiff brushes and chemicals wear your clothes with shocking rapidity—that such things as sunshine, fresh air or care are entirely unknown in the laundry? From every point of view, every woman should own a Haag.

Def. Ex. 63 page 2

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DEFENDANT'S EXHIBIT No. 64

DEALERS'

Confidential Price List

HAAG BROS. CO.

WASHERS

DEALER'S NET PRICE LIST, No. 5

"HAAG" ELECTRIC *and* POWER WASHERS

Effective, September 1, 1920 **Prices subject to change without notice**

HAAG BROS. CO., Peoria, Illinois

Terms: F. O. B., Peoria, Discount 5% 10 days, Net 30 days

Machine Number		Dealers Net Price,	Suggested Price to Consumer
	FOR GAS ENGINES OR OTHER BELT POWER.		
10-P	Honey short bench equipped with 1 Peg dolly and 1 flat dasher, 8-in. flat pulley, speed of drive shaft 250 R. P. M.	$ 45.00	$ 70.00
20-P	Honey long bench equipped with 1 Peg dolly and 1 flat dasher, 8-in. flat pulley, speed of drive shaft 250 R. P. M.	51.00	72.50
30-P	*Blue Ribbon Horse leg equipped with 1 Peg dolly, 8-in. flat pulley, speed of drive shaft 250 R. P. M.	45.00	70.00
35-P	*Blue Ribbon steel frame with 1 Peg dolly, 8-in. flat pulley, speed of drive shaft 250 R. P. M.	47.50	72.50
40-P	*Ideal Bench equipped with 1 Peg dolly, 10-in. flat pulley, speed of drive shaft, 250 R. P. M.	50.00	72.50
50-P	Haag Twin equipped with 1 Peg dolly and 1 flat dasher, 10-in. flat pulley, speed of drive shaft 250 R. P. M.	65.00	100.00
	EQUIPPED WITH ELECTRIC MOTORS.		
	The prices listed below cover only machines equipped with 110 V 60 A. C., or 110 V D. C. Motors.		
10-E	Honey short bench (wood tub) equipped with 1 Peg dolly and 1 flat dasher	70.00	110.00
20-E	Honey long bench equipped with 1 Peg dolly and 1 flat dasher	80.00	112.50
30-E	*Blue Ribbon Horse leg equipped with 1 Peg dolly	75.00	105.00
35-E	*Blue Ribbon steel frame with 1 Peg dolly	77.50	108.00
40-E	*Ideal Bench equipped with 1 Peg dolly	80.00	112.50
50-E	Haag Twin equipped with 1 Peg dolly and 1 flat dasher	100.00	140.00
60-E	Honey short bench (copper tub) with 1 Peg dolly and 1 flat dasher	90.00	125.00
70-E	Haag Cylinder Washer (with wood cylinder)	112.50	155.00
75-E	Haag Cylinder Washer (with metal cylinder)	122.50	170.00

PRICES ON ELECTRIC WASHERS EQUIPPED WITH ODD FREQUENCY MOTORS.

For machines equipped with motors as listed below, add $3.00 on all single tub machines, and $5.00 on all double tub machines:

32 Volt D. C. — 110 Volt 25 A. C.

220 Volt D. C. — 220 Volt 40 A. C.

For single tub electric washers equipped with 110 Volt 50 A. C. motors add $1.50.

Motors requiring special windings other than the currents described above are not carried in stock. Quotations will be furnished on request.

*Machines can be furnished with flat dashers, but must be ordered extra. Add $1.00 to above prices for extra peg dolly or flat dasher when ordered with machines.

The machines as listed on this price list are standard stock machines and when any other type of peg dolly or flat dasher is desired same must be ordered as an extra.

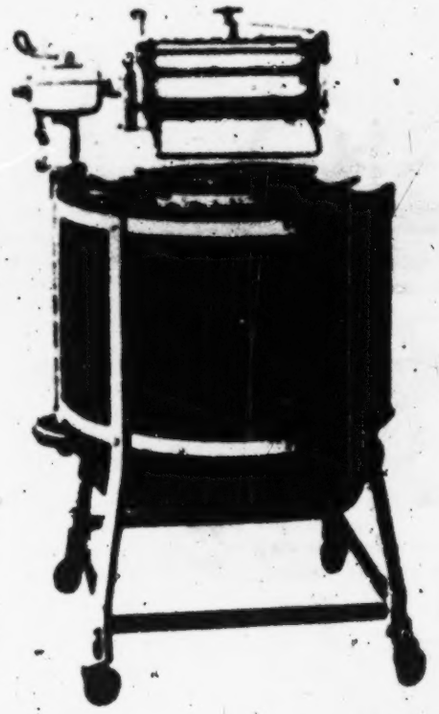
When ordering Electric Washers be sure to specify voltage of Motors, and voltage and cycles if Alternating Current.

Where special size pulley is wanted on power machine be sure to specify same on order.

5 143

"A Lifetime of Service"

5 144



THE latest product of the HAAG BROTHERS — Bigger — Better than ever. Paper and ink cannot do justice to this new washer. You have a wonderful surprise in store for you.

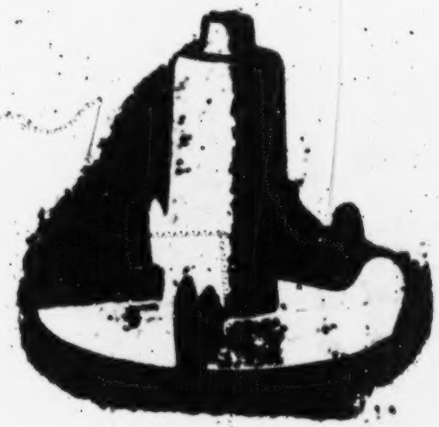
[illegible] —Have it demonstrated to you—it beats anything you have ever seen for quick—thorough—safe work.

THE large, copper tub will last a lifetime; the solid aluminum rotator (see below) is a revelation in efficiency in laundering; the mechanism is so quiet you can hardly hear it run; the frame-work is strong—built like a bridge. The same feature of the over-size motor, applied on all HAAG washers, also prevails here.

THE wringer, also the product of HAAG invention (see back page) is without an equal.

BIG claims—all of them, but the washer more than justifies them.

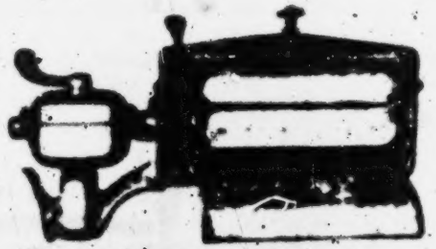
You owe it to yourself to see this washer demonstrated before you buy—then—YOU BE THE JUDGE.



MADE BY

HAAG BROS. CO., PEORIA, ILL.

DEFENDANT'S EXHIBIT No. 66 1372



Showing the new metal Haag wringer. Note compactness and large soft rolls.

In case of emergency the top and spring tip back and release rolls.

Removing or replacing the rolls is easy. You simply lift them out.

5 145

ADVERTISING DEPARTMENT

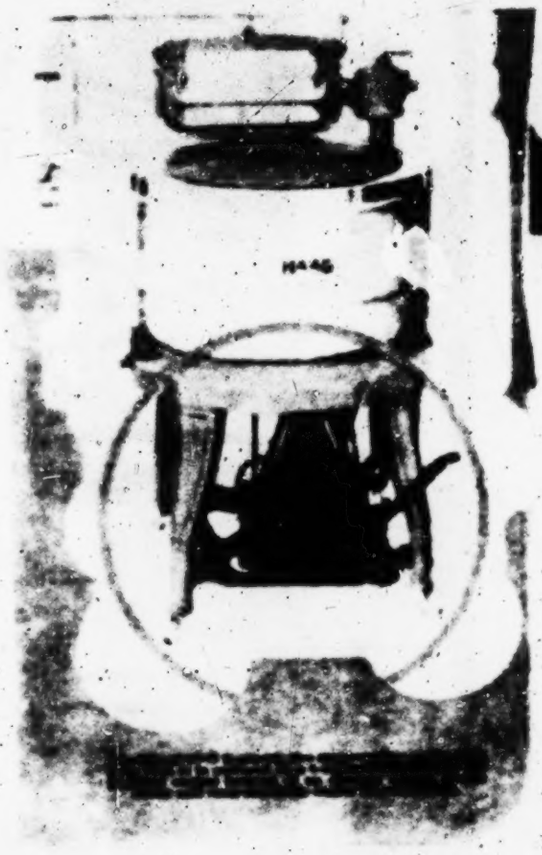
HERE
IT IS- 465
Dec 15 1935

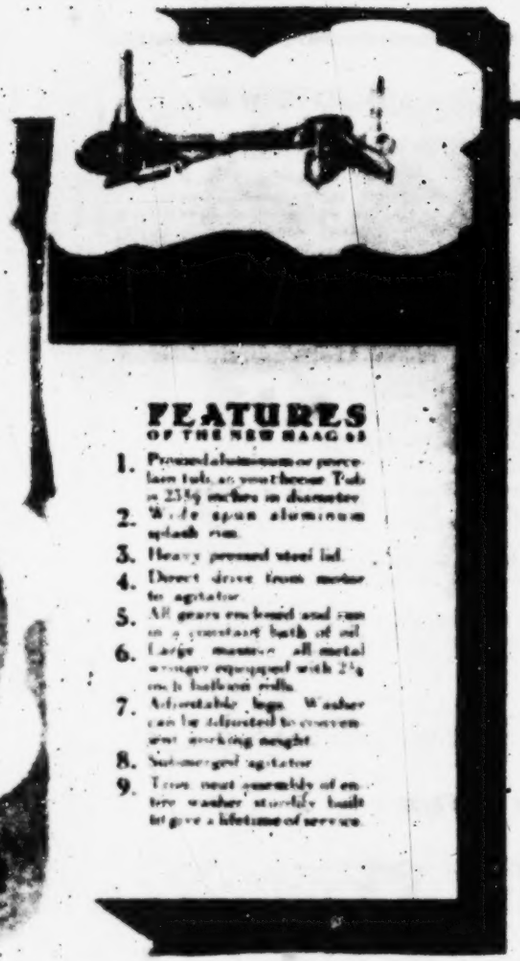
A New Member

IN THE

House of Haag

DO NOT
Remove from ad file





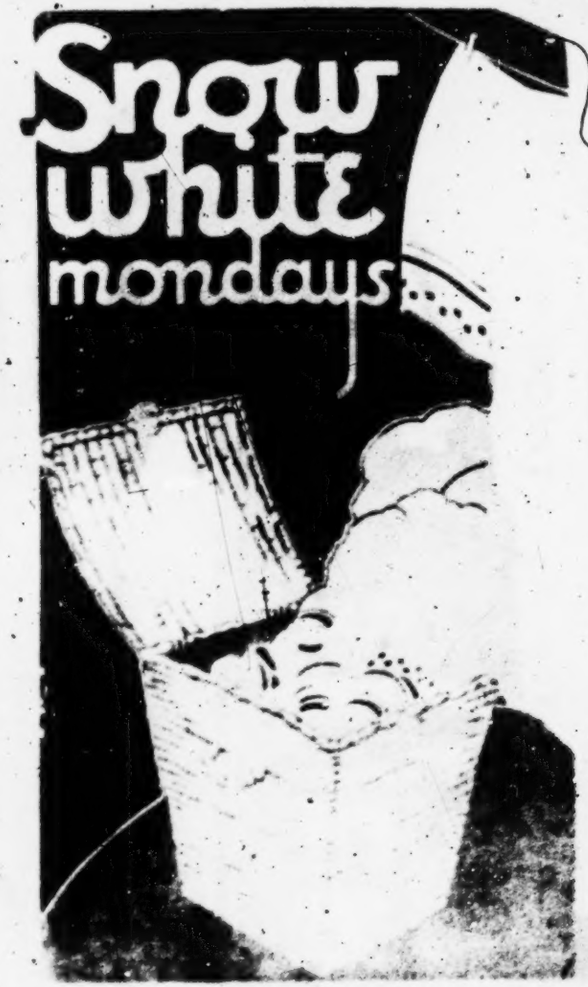
FEATURES
OF THE NEW HAAG 65

1. Porcelain-on-enamel processed tub, as your choose. Tub is 23½ inches in diameter.
2. Wide span aluminum splash rim.
3. Heavy pressed steel lid.
4. Direct drive from motor to agitator.
5. All gears enclosed and run in a constant bath of oil.
6. Large massive all metal wringer equipped with 2¼ inch hardwood rolls.
7. Adjustable legs. Washer can be adjusted to overcome any uneven flooring.
8. Submerged agitator.
9. Every vital assembly of entire washer sturdily built to give a lifetime of service.

HAAG
VORTEX

WHEN you see one of the new Haag 65's in operation, and see the wonderful work it does, we know that you will never be satisfied to do your washing by hand or with a less modern and efficient washer. Why, indeed, *should* you, when this new up-to-date machine costs so little? Remember, easy terms will be arranged.

You are urged to come to our store at your earliest convenience and let us show you how the new Haag 65 will save your time, labor, worry and clothes. You must see it to appreciate all it will do for you.



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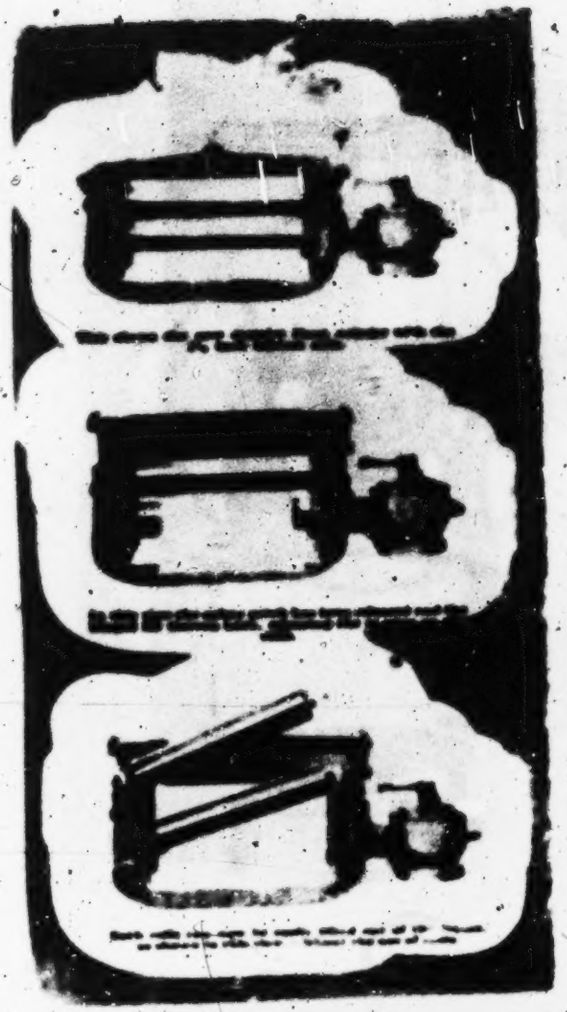


No more "Blue Mondays"

with the Haag 65

Does the thought of Monday's washday drudgery spoil the enjoyment of your week-end? Do you dread to face the burden of washing?

You need never have another "blue Monday"! The marvelous new Haag 65 will make your washing an easy and bright spot in the week! Right positively so!

This fine washer runs in dainty style at laundry cost on ordinary 110 V. A.C. light current. Will do the whole washing for an average family in a single short hour. And it will do it more thoroughly, and with less effort on your part, than you can imagine until you see it with your own eyes.

Washes Heavy and Light Articles with Speed and Safety

You can entrust all your washing to the new Haag 65. Blankets, linens, soft clothes, sheer and dainty underclothes—everything. It washes every piece quickly and thoroughly, yet does not damage a single thread or button. No preliminary soaking, boiling or hand rubbing is required.

The gentle, swift action of the Haag agitator forces the hot, soapy water through every mesh of the fabric and then drives every dirt particle out.

Your Choice of Tubs

The HAAG 65 is available either with a handsome pressed aluminum tub, or a tub of two-tone porcelain, inside and out. Both constructions are illustrated on this folder. Your choice of this equipment on either the Gasoline engine driven, or Electric Models.

You can tell the Haag 65 is substantial the moment you see and examine it. Every part, from top to bottom, is sturdily made of the best materials by expert workmen.

Yet, with all its beauty, all its sturdiness, all its mechanical perfection, all its durability (it will last a lifetime), you will find the greatest thrill in the performance—in the faultless washing job it does for you!

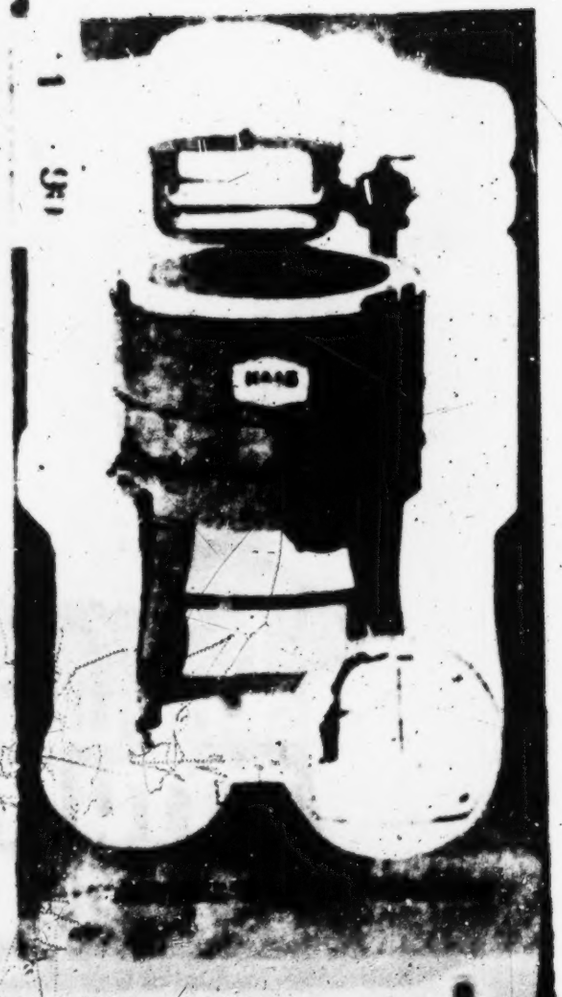
Remarkably Low in Cost

You'll be surprised when you learn how moderately priced this new washer is. You have many many other makers for less dependable and efficient, selling for a great deal more money. When you see the Haag 65 you will know at once that it represents astonishing value.

Even the family of modest means can afford a Haag 65. A small down payment puts one in your home. Easy payments for the balance will be gladly arranged.

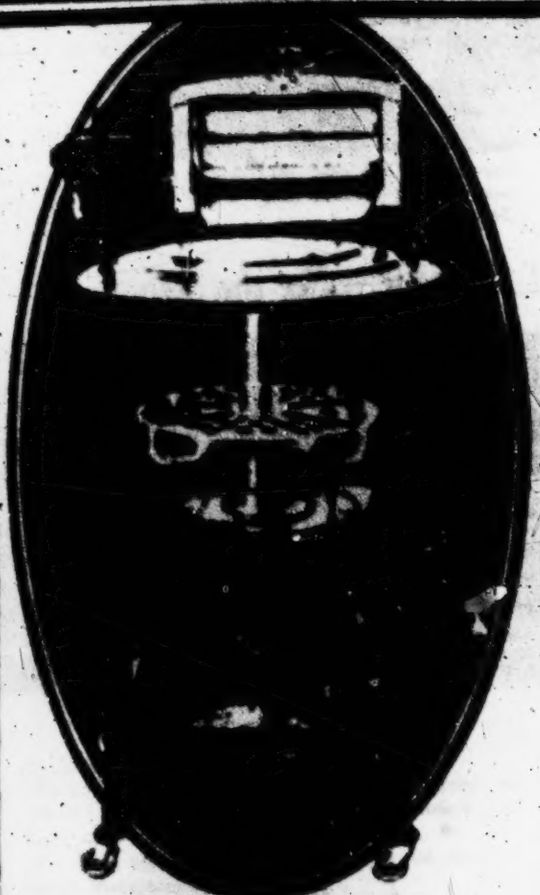
Let your nearest Haag dealer tell you more about the Haag 65

HAAG BROTHERS COMPANY, PEORIA, ILL.



DEFENDANT'S EXHIBIT No. 66 1376

The HAAG EIGHTY



HAAG

Never Before Such a Value!

Never before has there been available to housewives an all-metal washer having the beautiful appearance of the highest priced washers, the compactness and convenience of the Haag underneath drive, and the quality and durability of the famous Haag construction at a price to fit the pocketbook of every family. Never before such a value as the Haag Eighty! Never before such an opportunity for overworked women!

Ideal for Small Apartment Kitchens

You can appreciate the convenience of the time-tested underneath drive on the Haag Eighty even without a trial. There is no mechanism connected with the lid. The lid can be lifted free of the washer and used as a sorting tray. The tub opens up fully, giving easy access to bandiness garments. The light, self-adjusting agitator is easily lifted out, making the heavily nickeled tub as easy to wipe out as a dishpan.

Compact and simple, with the fewest possible moving parts, the Haag Eighty requires minimum care. Beautiful and symmetrical—a washer you will be proud to have in your kitchen and show to your friends.

Stainless Nickel-Lined Copper Tub

The tub lid is strong open aluminum and serves admirably as a sorting tray. The tub itself is constructed of heavy stain-proof nickel-lined copper which has been burnished and lacquered. There can be no danger of rust or corrosion, inside, nor out. A sturdy black enameled iron frame, smoothly finished, graceful in design, sets off the lacquered copper tub.

Cleaner, Easier Washings

The Haag Eighty is thereby efficient. The new, light aluminum agitator, in the stainless nickel-lined copper tub, forces rich, hot, sudsy water thru the meshes of the fabrics. This gentle flushing action cleans the most soiled garments easily and quickly. Dainty pieces are handled with the gentleness of your own hands, yet heavy blankets are firmly and quickly cleansed.

Enjoy bright "Haag-White" washings from now on—free from public contamination and the annoyance and expense of sending your washing out—without the backbreaking labor of doing it by hand.

A Perfect Wringer

Everything that could be desired—large, soft rolls which do not crush buttons but wring dry without excessive wrinkling; all-iron hard maple bearings requiring no care and eliminating oil-streaked clothing; one tension screw on hinged top to adjust rolls, both rolls easily removable to disengage articles which may have wrapped around them; quick-acting safety release, large, smooth and rounded—easy on dainty hands; heavily nickeled double drain-board—one stationary and the other reversible—never allows water to drip on the floor.

5 146

The Finest Washer Ever Built

to sell at such a Price!

Service-Proof Mechanism

The Haag Eighty gearcase is compact and simple —containing all machine-cut gears, ball bearing steel drive shaft, steel worm, and graphited oil-less bronze bushings. It will give trouble-free service for a lifetime.

The underneath drive construction of the Haag Eighty has been used successfully for many years on the famous wood tub Haag Nuway. It is therefore time-tested and proved satisfactory.

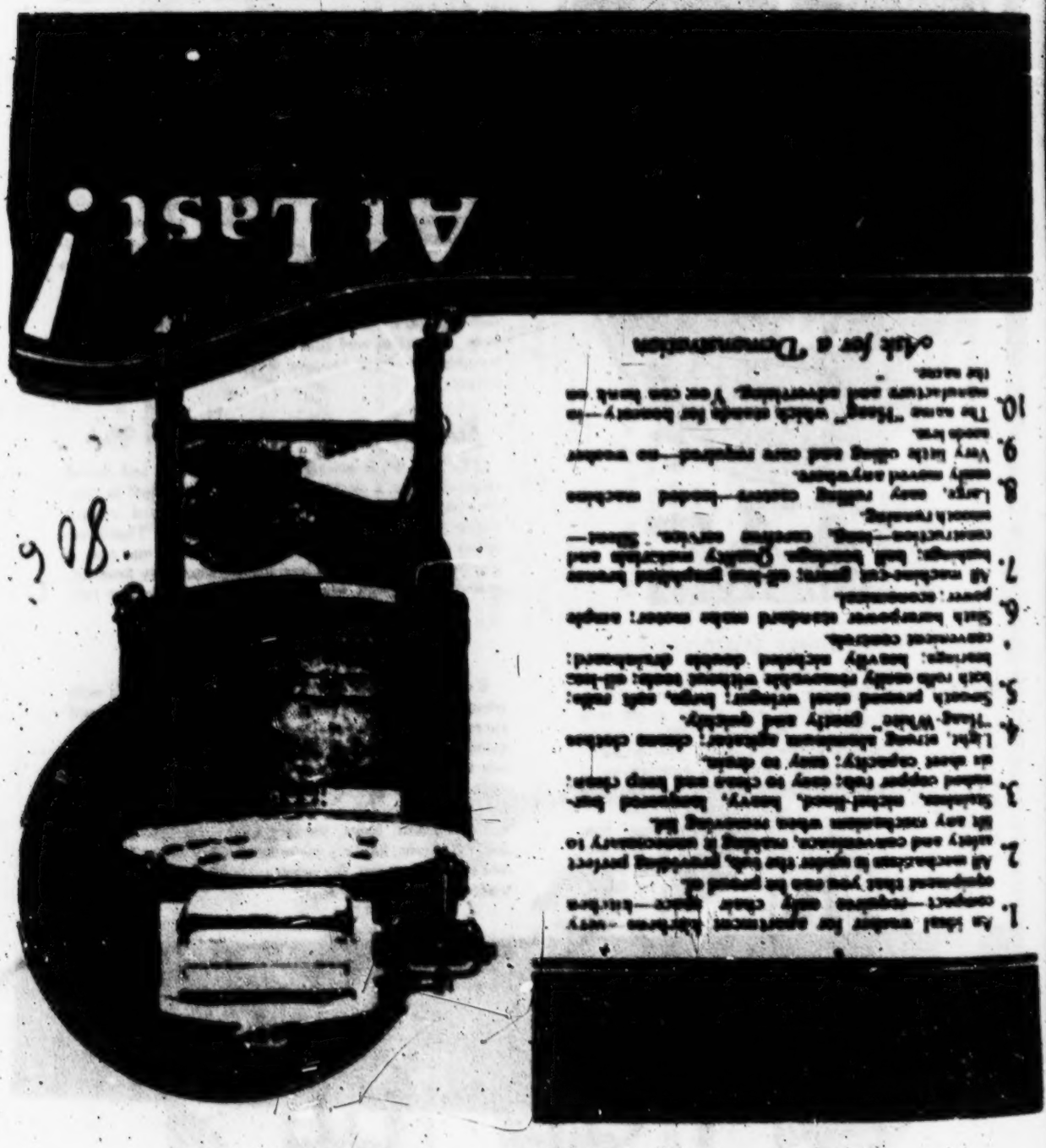
There is no more efficient washer than the Haag Eighty and few which will wash as clean and quickly

Long Lived Because of Haag Quality Construction

With reasonable care the Haag Eighty will give uninterrupted, trouble-free service for an average lifetime—a while because of the high standard of Haag materials and workmanship.

The Haag Eighty is equipped with a one-sixth horse-power, standard make motor. These motors furnish ample and continuous power, yet are very economical—consuming power at the rate of about 3c per hour.

Happier Wash Days and Low Cost — See the Eighty!



Ask for a Demonstration

Removing or replacing the rolls is easy. You simply lift them out.

The New Haag Patent Wringer

is the most talked of wringer ever put on a washing machine. Its simplicity makes it the most convenient wringer ever designed. Both rolls can be easily lifted clear of the frame. The bearings are of hard maple boiled in tallow so they never need oiling. No oil and no rust to stain clothing. The top tips back on a hinge so that it cannot fly off in your face when released. A fountain pen or medicine dropper can safely be run thru the 2 inch soft rolls—buttons are safe in the Haag wringer.

The Vortex Agitator

is the result of over two years constant experiment. At last we can offer you an agitator which does not tangle nor tear clothing. The dozens of imitations of the Haag Vortex which have been put on the market in the last few months must still pass thru the experimental stage that the Vortex passed thru a year or so ago. The elimination in the Vortex of the open vertical crack still found around the base of most agitators amply justifies our phrase—"Fast Washing Made Safe."

The exact shape of the Vortex agitator is of great importance in the gentle rapid handling of your washing.

Ten years from now—you'll like your Haag Vortex even better.

1. Washes cleaner and faster, yet more gently.
2. You will be congratulated on its beauty.
3. Clothes can be put in or taken out while washer is running.
4. Drains thoroly and quickly.
5. Very compact—only 23 inch floor space needed.
6. Easy to clean—stainless nickel lined tub.
7. All moving parts enclosed.
8. Simple in design yet sturdy in construction.
9. Cushion wringer rolls — oversize casters.
10. No tangling—no soaking—no hand-rubbing.

Only by actually seeing washing done in the Haag Vortex can you realize how much it means to you. Phone or call for demonstration. Today!

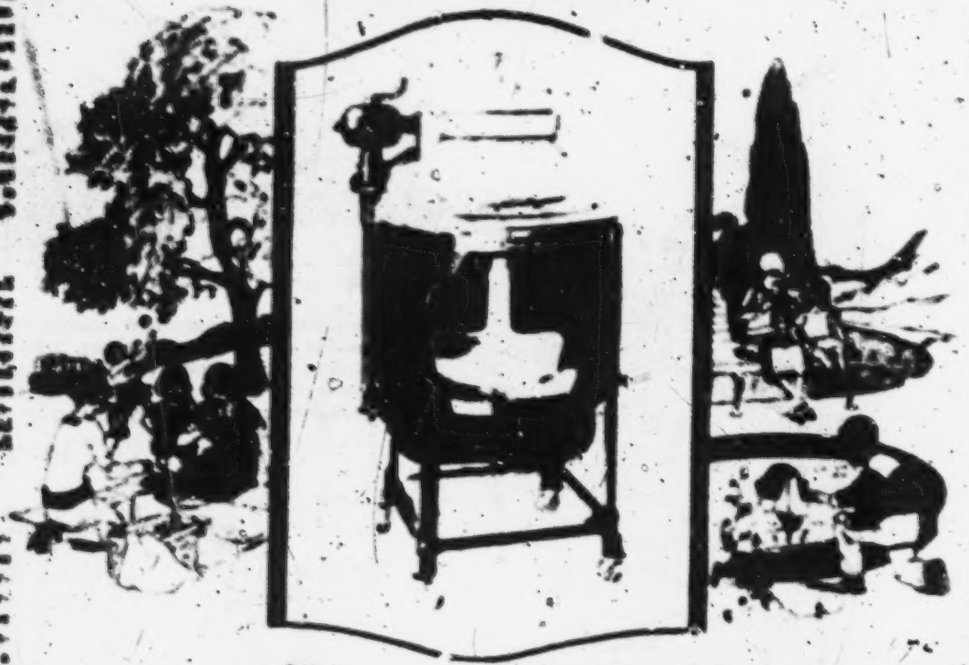
DEFENDANT'S EXHIBIT No. 66

1378

EASIER, QUICKER, CLEANER WASHING

The New HAAG VORTEX

NO TANGLING, NO SOAKING, NO RUBBING



Women everywhere are gladly welcoming this new electric washer that reduces washing time to astonishingly short terms as much more. Gone for all time are the old, slow and tiring methods of washing clothes, making easy every vestige of dirt without rubbing—without injury to the most delicate fabric.

All cloth, like ordinary washing contains, consists of small capillaries made up by interlacing thread. (The accompanying diagram shows a piece of fabric under the magnifying glass.) You've no doubt noticed how dirt adheres to the very capillaries of your garments—IN, not on the surface. Dirt gets into fabrics in the same way. Only a very small percentage is on the surface. Most of it is in the pores. Therefore it is clear that to remove the dirt the water must be forced through the fabric. This is precisely what is accomplished by

The New Haag Vortex

In the Haag Vortex the clothing is kept suspended at all times by the rotating action of the agitator (as shown in the illustration) so that the maximum amount of the rapidly moving water can pass through a given square inch of the fabric each second. The old types of washers could not keep the clothing thus suspended. They simply rolled or pounded the clothing in a big ball or used so that the washing action took place only on the outside of the wad of clothing, consequently a great deal longer time was required in the old style washers than in the Haag Vortex, which exposes all of the clothing to the water action all of the time.

Fast

In 4 to 7 minutes the heaviest, dirtiest garments you can find are washed thoroughly clean in the Haag Vortex. Furthermore, the finest, most delicate lingerie are cleaned in a every fluffiness without the least danger of breaking a thread.

Simplicity—Durability

Long years of experience in manufacturing fine electric washers have resulted in the extreme simplicity of Haag Vortex construction. No washer made has fewer moving parts to get out of order. No washer made requires less oiling. It is no exaggeration to say that the Haag Vortex offers you A lifetime of carefree service.

Gas Engine Models

If you have no electricity, we can offer you the Haag Vortex with the finest little four cycle gasoline engine obtainable built right into the washer in place of the electric motor. This engine drive washer is exactly like the regular model except that the engine replaces the motor.

Or if you already have a stationary gas engine you can secure the Haag Vortex with only an extended pulley shaft to be run by your own engine.

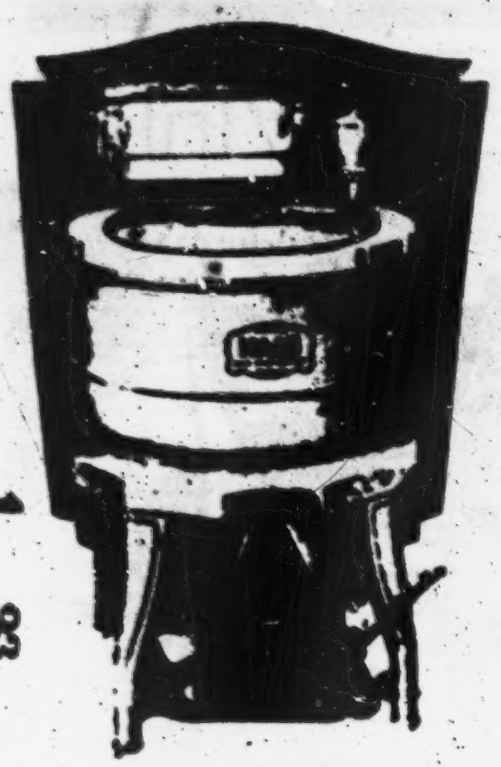
Water Heater

At a small extra charge a gas burner can be furnished on the Haag Vortex. A special flange keeps all the flame under the tub so that it is entirely safe to use. With this burner water can be heated right in the washer tub.

Advantages of Construction

HAAG BROS. CO. ~ PEORIA, ILLINOIS

DEP Ex. 66-p.2



Model «65-G»

The Model "65-G" is exactly the same washer as the "65-E" only that it is powered by a 4 cycle Briggs & Stratton gasoline engine instead of an electric motor. Starts easily and runs smoothly under all conditions.

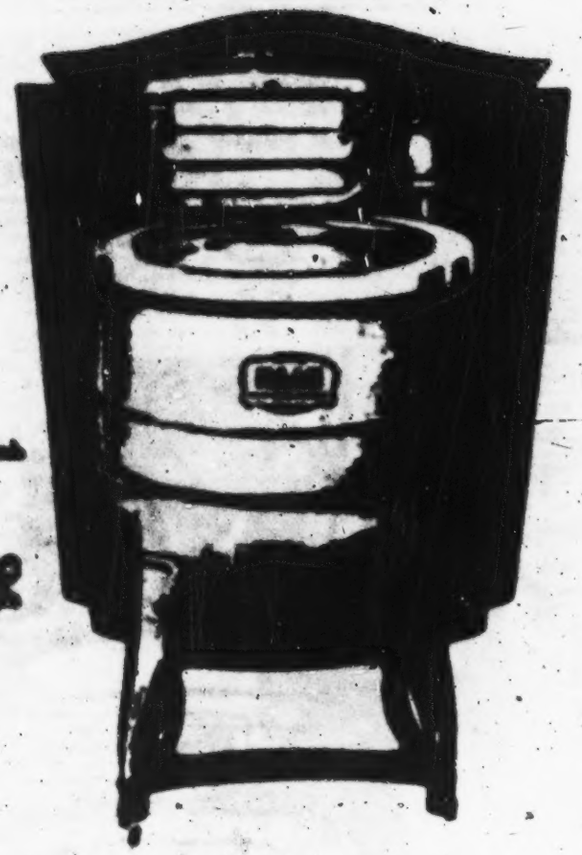
Features of the New Haag «65»

1. Pressed aluminum tub 21½" in diameter
2. Large massive all-metal wringer, equipped with 2½" balloon rolls.
3. Direct drive from motor to agitator.
4. All gears enclosed and run in a constant bath of oil.
5. Power unit—¼ H.P. General Electric motor or 4-cycle Briggs & Stratton gasoline engine.
6. Wide span aluminum splash rim.
7. Heavy pressed steel lid.
8. Adjustable legs. Washer can be adjusted to convenient working height.
9. Submerged agitator.
10. Trim, neat assembly of entire washer sturdily built to give a lifetime of service.

Form 38 19 Printed in U.S.A.

DEFENDANT'S EXHIBIT No. 67

1380



Model «65-E»

HAAG

No More «Blue Mondays»

with the New Haag «65»

Does the thought of Monday's washday drudgery spoil the enjoyment of your week-end? Do you dread to face the burden of washday?

You need never have another "Blue Monday"!. The marvelous new HAAG "65" will make your washday cheery and bright.

This fine washer—new in design, new in beauty and new in efficiency—will do the whole washing for an average family in a single short hour. And it will do it more thoroughly, and with less effort on your part, than you can imagine until you see it with your own eyes.

Washes Heavy and Light Articles with Speed and Safety

You can entrust *all* your washing to the new HAAG "65"—blankets, linens, work clothes, sheer and dainty undergarments—everything. It washes every piece quickly and thoroughly, yet does not damage a single thread or loosen. No preliminary soaking, boiling or hand-rubbing is required.

The gentle, swift action of the Haag agitator forces the hot, soapy water through every mesh of fabric—and then drives every dirt-particle out.

Beautiful in Appearance--Sturdy in Construction

Just look, the HAAG "65" is equipped with a porcelain aluminum tub. It is truly a beauty in every respect—graceful in every line, with a finish that is colorful and pleasing.

You can tell it is substantial the moment you see and examine it. Every part, from top to bottom, is sturdily made of the best materials by expert workmen.

Yet, with all its beauty, all its sturdiness, all its mechanical perfection, all its durability (it will last a lifetime), you will find the greatest thrill in its performance—in the freedom washing job it does for you!

Remarkably Low in Price

You'll be surprised when you learn how moderately-priced this new washer is. You have seen many other makes, far less dependable and efficient, selling for a great deal more money. When you see the HAAG "65" you will know at once that it represents astonishing value.

Even the *family of modest means* can afford a HAAG "65". A small down payment puts one in your home. Easy payments for the balance will be gladly arranged.

Let your nearest HAAG dealer tell you more about the HAAG "65"

HAAG BROTHERS COMPANY ◆ PEORIA, ILLINOIS

DEFENDANT'S EXHIBIT No. 68

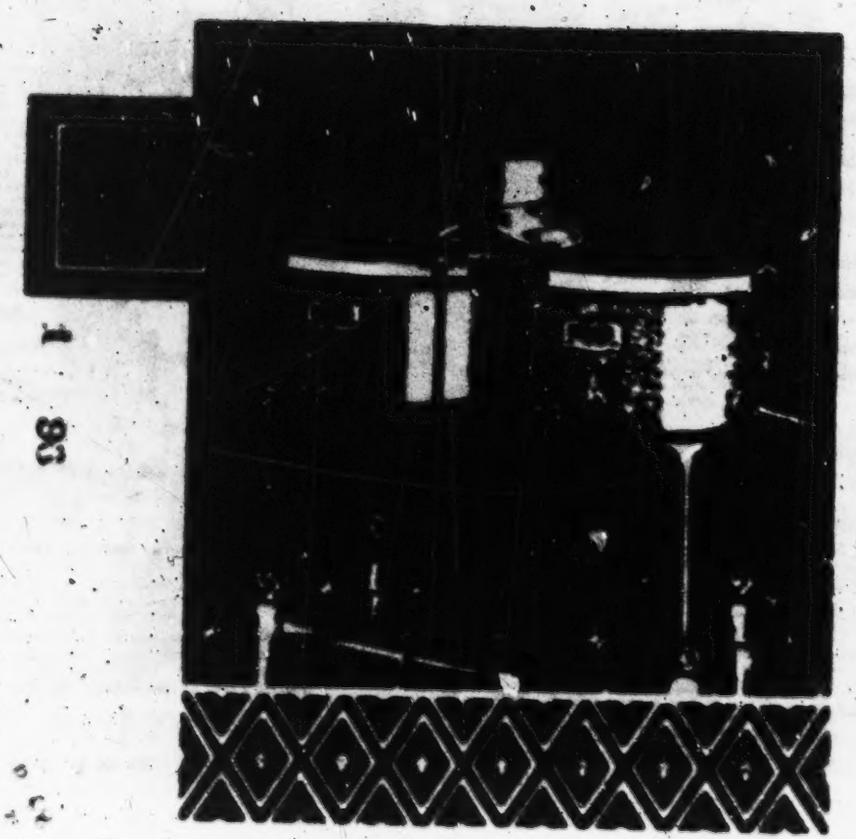
1382

HAAG

FEATURES

The two suds method

1 85



DIRT REMOVED FROM THE MESHES OF FABRICS EASILY-EFFICIENTLY ···

The illustration at the right is a lady's handkerchief, seen under the probing eyes of a magnifying glass. Just note how little particles of dirt are imbedded in the meshes of the fabric. These little dirt particles must be washed out of the meshes, not merely washed from the surface.

A man's shirt cuff, a woman's house dress, dress overalls, a baby's clothing, in fact every garment reveals the same story under a magnifying glass. To wash these garments absolutely clean, thousands of tiny jets of hot, sudsy water must be forced through the meshes of these garments many, many times in order to remove the dirt entrenched there.

This is just exactly what the Haag model 91 does. The engineers on this machine are so scientifically designed, after years of testing, that hot sudsy water is forced at the proper speed and in the exact direction necessary to dislodge and thoroughly remove every one of those tightly clinging little dirt particles.

Put your clothes through the first rub of this truly remarkable washer containing a hot sudsy rub which will loosen the dirt, then wring them once (the padding bar rolls in the second rub. This bleaches, sanitizes and cleans your clothes atmospherically. It is then that you know what soft, whiter, and spotless washings are like and how easy they are to accomplish.

HAAG BROS. COMPANY
PEORIA, ILL.

"Fast Washing Made Safe"—
An Exclusive Haag Feature

THE [illegible] of the Haag Vortex agitator is of primary importance in the gentle rapid handling of your washing. This preferred agitator is the result of over three years of constant experiment. In the Haag Vortex washer you have an agitator which does not tear nor tangle clothing, which creates a water movement which will clean the dirtiest clothing by keeping clothing separated and loosening easy suds from the meshes of the fabric.

It was Haag Brothers Company who discovered and patented the Haag Vortex Principal Agitator construction. With thickness the open vertical mesh at the base of the agitator which is exclusive to Haag garments.

As indicated by the illustration on this page, the Haag Vortex agitator is mounted over a raised base plate which is slanted to the side location. In the Haag Vortex there is no danger of delicate fabrics washing down into an open mesh and being ground between metal surfaces. Nor is there danger of lighter washing in such an opening and jamming the agitator—thereby burning out the motor and necessitating expensive repairs.

Haag Vortex Agitator

BOTTOM OF TUB

BOTTOM OF TUB

THE HAAG VORTEX IS SAFE

New, More Convenient Haag Wringer

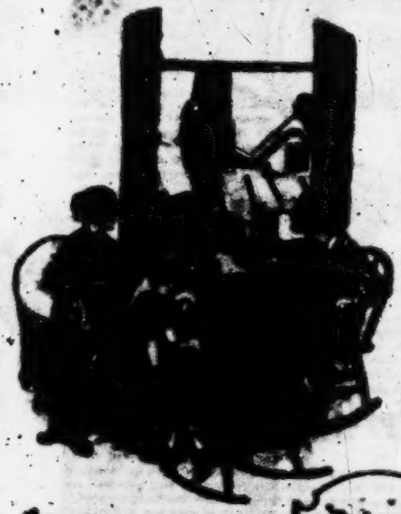
THE [illegible] Haag Wringer has been completely remodeled in convenience and detail of appearance. It is a smooth finish all around gray enameled frame, easy to keep clean. Operates with safety clutch mechanism without gears operates on self-oiling ball bearings. There will be no pulled fingers and no all around dangers. The new Haag Vortex Wringer has a double cushioned flexibility rubber roll consisting of which is exclusive, and the other invisible. This is an added convenience enough appreciate. A convenience [illegible] Haag Wringer also. Ranks one of Haag's.

Other Haag Models

There is a Haag Model to suit the convenience and means of every home. Two-piece models, models equipped with gasoline motors, models having a pulley for use with a stationary farm engine. If for any reason the Haag Vortex Electric does not please you, ask the dealer about the other Haag Models.

Ask for a Free Demonstration

HAAG VORTEX



"No, I really PREFER washing at home now that I have the HAAG

DEFENDANT'S EXHIBIT No. 69

1384

EASIER, QUICKER, CLEANER WASHING—

HAAG

NO TANGLING, NO SOAKING, NO RUBBING

The Haag Vortex—
Women's Choice!

W[illegible]

The New Principle — A Better Way

[illegible]

Dirt is in the Mesh
The Haag Vortex Gets It Out

[illegible]

FEATURES

1 [illegible]

2 [illegible]

3 [illegible]

4 [illegible]

5 [illegible]

6 [illegible]

FEATURES

7 [illegible]

8 [illegible]

9 [illegible]

10 [illegible]

11 [illegible]

12 [illegible]

Simplicity — Durability

Low [illegible]

Super-Excellence

[illegible]

10,000 Women Told Us—

[illegible]

The Haag Vortex is The Ideal

[illegible]

BEAUTIFUL—
A Washer to be Proud Of!

HAAG BROS. CO. ~ PEORIA, ILLINOIS

Now Equipped With The Famous HAAG Agitator

The demand for the better built, low priced HAAG Eighty has grown to such proportions that HAAG BROS. CO. now finds it possible to further improve this remarkably successful washer.

The new HAAG Eighty aluminum submerged agitator which provides thorough washing action.

Greater and more positive agitation is achieved in the Eighty with the aid of this new aluminum submerged agitator which marks a notable advance over the suspended dolly used formerly.

Large family washings are handled in less time with greater ease; clothes are washed thoroughly and with the gentleness of your own hands without hand-rubbing, boiling or soaking.

Ideal for Small Apartment Kitchens

The tub opens up fully, giving easy access to bundle some garments. The light agitator is easily lifted out, making the heavily nickeled tub as easy to wipe out as a dishpan.

Compact and simple, with the fewest possible moving parts, the HAAG Eighty requires minimum care. Beautiful and symmetrical—a washer you will be proud to have in your kitchen and show to your friends

Quality and Convenience Features

1. An ideal washer for apartment kitchens—every requirement and many other kitchen cabinets that you will be proud of.
2. All mechanism is under the tub, providing perfect safety and convenience, making it unnecessary to lift any mechanism when removing tub.
3. Stainless, nickel-lined, heavy, hammered copper tub; easy to clean and keep clean; dry clean capacity; easy to drain.
4. Wide strong stainless agitator; cleans clothes thoroughly and quickly.
5. Smooth grooved roll wringer; large soft rolls; both rolls easily removable; safety release handle; handy folding drain-board; convenient controls.
6. Quarter horsepower standard make motor; ample power; economical.
7. All metal cabinet, gray enamel finish, heavy body, full [illegible] construction throughout; [illegible] finish; modern streamlined design.
8. Large, new rolling casters—loaded washing easily moved anywhere.
9. Very little oiling and care required—no washer needs less.
10. The name "Haag" which stands for honesty in manufacture and advertising. You can bank on the name.

Ask for a Free Demonstration

INC.

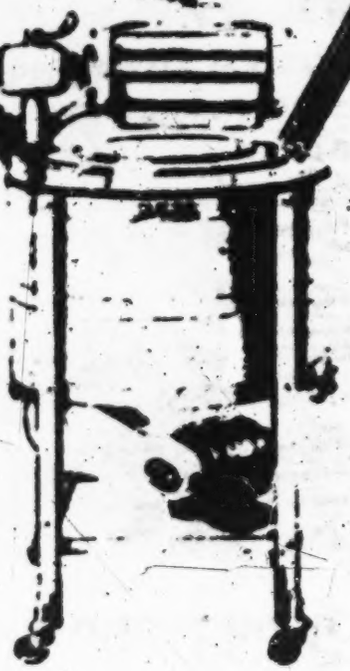
GERLINGER EQUIPMENT CO.
DISTRIBUTOR
FOSTORIA, OHIO

Printed in U. S. A.

The *Low Priced* Sensation of the Year

—pronounced Hayg

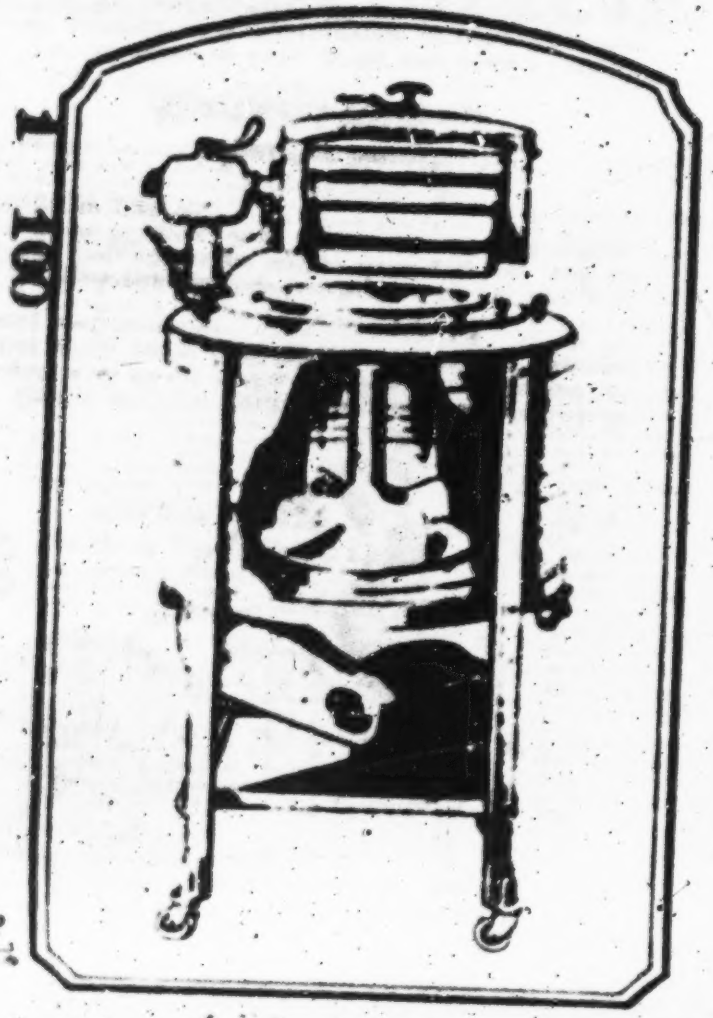
HAAG EIGHTY



Now made *even better*

DEFENDANT'S EXHIBIT No. 70
1386
2402

THE FINEST WASHER EVER BUILT TO SELL AT SUCH A PRICE!



—pronounced Hake

HAAG EIGHTY

One Year of Nationwide Acceptance

The HAAG Eighty cannot be compared with the many typically cheap washers which sell at or near its price. No product having less than the quality contained in the Eighty's every part could have won in so short a time the approval of the thousands of housewives who are satisfied HAAG Eighty owners.

Cleaner, Easier Washings

The HAAG Eighty is thoroughly efficient. The new light aluminum agitator, in the stainless nickel-lined copper tub, forces rich sudsy water through the meshes of the fabrics. This gentle flushing action cleans the most soiled garments easily and quickly. Dainty pieces are handled with the gentleness of your own hands, yet heavy blankets are firmly and quickly cleaned.

Stainless Nickel-Lined Copper Tub

The tub lid is strong spun aluminum and serves admirably as a sorting tray. The tub itself is constructed of heavy stainproof nickel-lined copper and is lacquered a beautiful gray. There can be no danger of rust or corrosion, inside, or out.

A Perfect Wringer

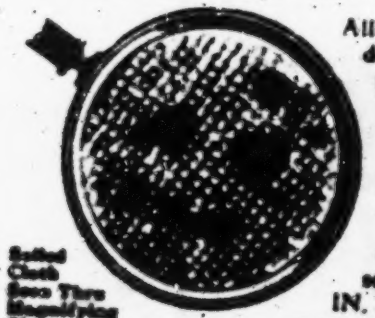
Everything that could be desired—large, soft rolls which do not crush buttons but wring dry, oil-less hard maple bearings requiring no care and eliminating oil-streaked clothing, one tension screw on hinged top to adjust rolls, both rolls easily removable, quick acting safety release, heavily nickeled double drain-board—one stationary and the other reversible—never allows water to drop on the floor.

Experience the Joy of HAAG Ownership

Enjoy bright HAAG White washings from now on—free from public contamination and the annoyance and expense of sending your washing out, without the backbreaking labor of doing it by hand.

ALL-METAL CONSTRUCTION and MANY OTHER OUTSTANDING FEATURES

Every Vestige of Dirt is Removed



All cloth, like ordinary window screening, consists of small squares made of interlacing threads. (The accompanying illustration shows a piece of fabric under the magnifying glass.) You've no doubt noticed how dirt collects in the tiny squares of your screen—IN, not on the surface—most of it is in the mesh. Therefore it is clear that to remove the dirt, the water must be forced through the fabric. This is precisely what is accomplished by the HAAG Eighty.

Complete Cleanliness is Assured with This Positive Water Action

Note how the water action describes a complete circle. It is thrown from the bottom center of the tub to the sides and then is swirled to the center post. This powerful motion of the water just can't help washing your clothes clean. We would like you to see the HAAG Eighty—to try it—to do a complete week's washing free in this splendid machine. We know that you will be enthusiastic over it—but should you not be we wouldn't want you to own it. See this marvel—designed by women for women.

HAAG BROTHERS COMPANY, PEKIN, ILL.

DEFENDANT'S EXHIBIT No. 61

1388

HERMANCE WASHING MACHINE
DEFENDANT'S EXHIBIT #20

FIG. 1

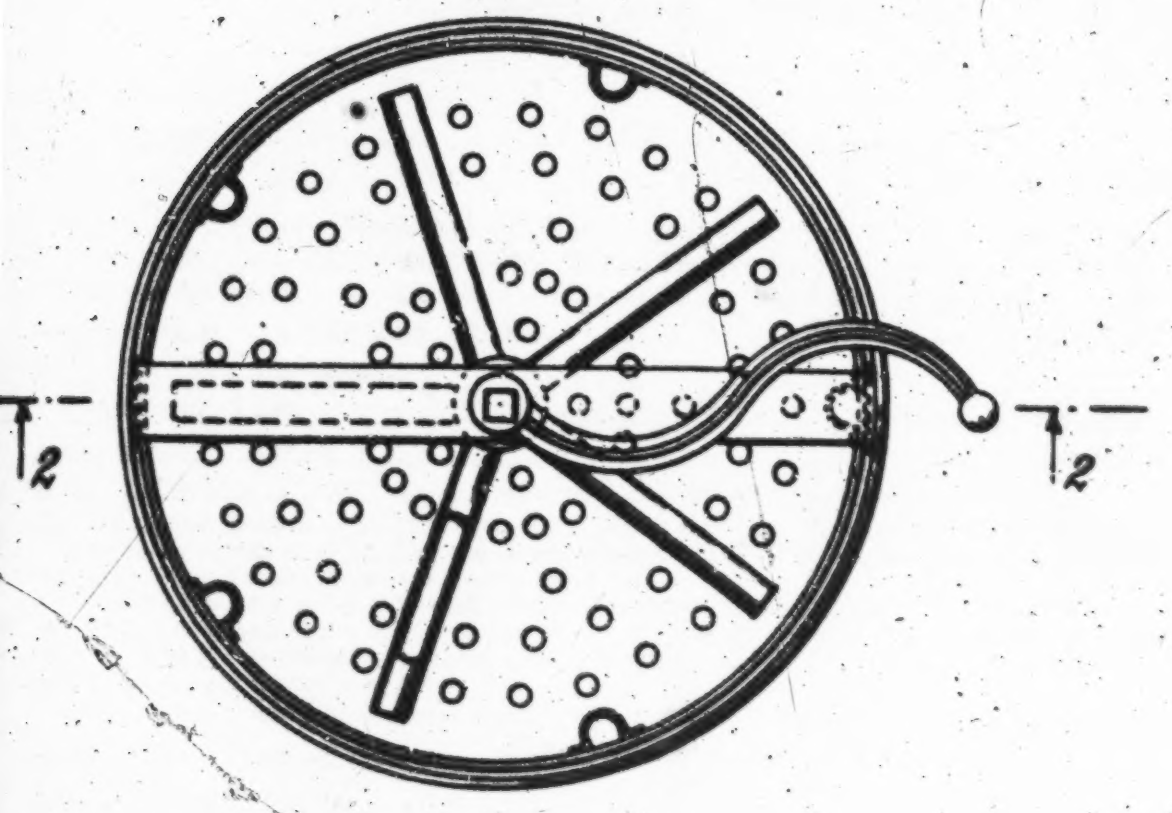
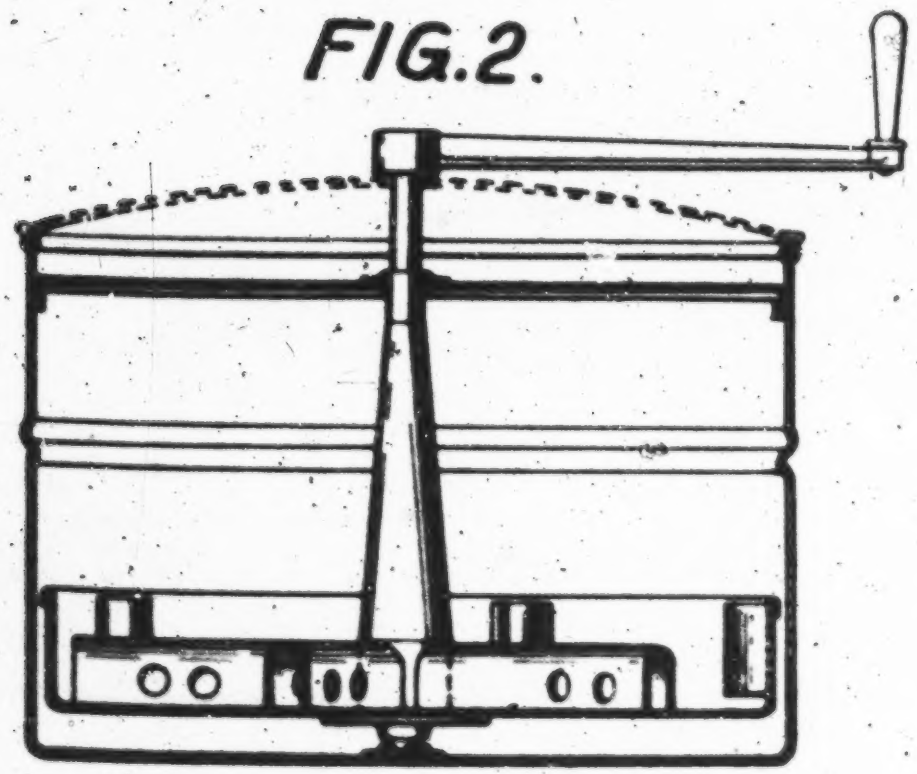


FIG. 2.



1388

DEFENDANT'S EXHIBIT No. 101 1389

Original—To be sent to Ripon Acceptance Co.

SPEED QUEEN WASHER
Conditional Sales Contract

Date Oct. 12, 1931

W.A.Osgood

Town Syracuse State N.Y.

Model No. Star Serial No. 307096

Description of Article Washing machine

Manufactured by Easier Seeling Mfg. Co.,

I acknowledge delivery to me of the above described article for which I agree to pay to you, your successors or assigns the sum of Seventy Seven Dollars ($ 77.00) as follows:

Twenty five Dollars ($ 25.00)

cash in hand and Five Dollars ($ 5.00)

on the 12 day of each consecutive month thereafter, beginning Nov. 1931

The final monthly payment to be the amount of the balance then due. It is agreed that the title and ownership of said article is to remain in you, your successors and assigns until all of said indebtedness is fully paid in cash and that thereupon the title and ownership is to pass to me.

Should I fail to make any of the monthly payments as above specified the entire balance will then become due and payable and I agree at you or your assigns' option to make such payment or return said article to you or your successors or assigns on demand and without legal process, you to retain for use and depreciation, all payments made by me, unless otherwise provided by law.

I further agree to take good care of said article and be responsible for its loss by theft, fire or other casualty and not to remove it from my residence 201 East genesee St., (Number and Street) Syracuse (City) Ny (State) until I first obtain consent in writing.

It is further understood and agreed that no other agreement, oral or written, express or implied, shall limit or qualify the terms of this contract.

Signed Laura C B Hensley (Seal)
(Purchaser)

Accepted Oct 28 1931

Signed W A Osgood

By (Dealer)

Witness (Salesman)

Read this document carefully before signing

Original and other copies of contracts to be written in ink or indelible pencil.

Assignment and Guaranty

In consideration of one dollar, and more, paid to the undersigned by the Rupon Acceptance Company, a corporation, the receipt of which is hereby acknowledged, the undersigned hereby sells, assigns, and transfers to said corporation, its successors and assigns, all his, their, or its right, title and interest in and to the within contract, and guarantees the genuineness of and the fulfillment of the same, the prompt payment of all obligations given under or arising out of it, and all renewals or substitutions of the same.

That if the undersigned be permitted to collect for and remit to the said corporation the payments to be made on this contract, such permission shall not be deemed a waiver or modification of any of the terms of this guaranty.

Undersigned acknowledges that this contract is purchased by the assignee, pursuant to an existing agreement between the undersigned and said assignee, and that in making said purchase, the assignee is expressly relying upon all the warranties, terms and provisions of said agreement, the same being hereby made a part hereof by reference.

The said assignee shall not be liable to the undersigned for any failure to file or record this contract as provided for by law or for failure to give notice to the undersigned of any delinquency in payment or for any lack of diligence by the said assignee in making collection.

Date Oct 28 1931

Wadsworth

By .....

Address .....

CONFIDENTIAL CREDIT INFORMATION

Full name Laura C E Wellesley Age 50-2

Residence Address 302 W Newcomb St

How long at above address 10 yrs

Previous address ✓

Purchaser is Married Married

Purchaser's Occupation Saleswoman

Employed by Retail

How long 5 yrs

Does Purchaser own Real Estate yes

References:

Name	Address

E 1665

United States District Court

Western District of New York

Exhibit 10 in evidence

Date 11/4/33

Clerk

By Deputy Clerk

1391

DEFENDANT'S EXHIBIT No. 102

SCHEDULE	
1 "1900" Agl. Fleo. Washer Form 3 $135.00 rebate of $5.00 will be allowed on this account if payments are made at the store for the part due and on the date due. TOTAL	Mr. Syracuse, N.Y. 1/1/1926 *This is to Certify* That I have received of W. A OSGOOD the goods described in this schedule, and for which I agree to Pay Promptly the sum of $135.00 Dollars, as follows $20.00 down and $15.00 per month payable at the store 909 Salina St on the 1st day of the Month It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. OSGOOD until that time. In default of any payment, at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon my premises and remove the same without process of law, or the whole amount becomes due at your option. I hereby agree not to remove said property from No. 393 ast Newell Street without written permission from your office. All verbal agreements are merged in this Contract. I hereby guarantee the payment of the above. Laura C. B Rahr WITNESS DUPLICATE MUST BE LEFT WITH CUSTOMER.

5 185

Mr Laura C B Rahr
393 E Newell

Date Paid 20 Nov 26

5 186

United States District Court
Eastern District of New York
Deputy Clerk
Clerk
Date

SCHEDULE

1 Hg. Elec
Stove #3 135.00

A rebate of $5.00 will be allowed on this one if payments are made at the store

TOTAL

No. Syracuse 3/7 1920

This is to Certify That I have received of W. A. OSGOOD the goods described in this schedule, and for which I agree to Pay Promptly the sum of $135.00 Dollars, as follows $10.00 down $10.00 per month from date of store until April 1st - thereafter $15 per month

It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. OSGOOD until that time. In default of any payment, at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon my premises and remove the same without process of law, or the whole amount becomes due at your option.

I hereby agree not to remove said property from No. 105 Marcellus Street E. End Depot without written permission from your office.

All verbal agreements are merged in this Contract.

I hereby guarantee the payment of the above. N. S. Van Alstine WITNESS

DUPLICATE MUST BE LEFT WITH CUSTOMER.

SCHEDULE.

3/3/1920
1 Hg Elec
Stove # 3 137.50

A rebate of $2.50 allowed on this one if terms of Contract are kept

No.

No. Syracuse, 3/9 1920

This is to Certify That I have received of W. A. OSGOOD the goods described in this schedule, and for which I agree to Pay Promptly the sum of 137.50 Dollars, as follows 10.00 down One 15.00 per month from the 1st the store one the 9th

It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. OSGOOD until that time. In default of any payment, at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon my premises and remove the same without process of law, or the whole amount becomes due at your option.

I hereby agree not to remove said property from No. 106 West Street Ave. without written permission from your office.

All verbal agreements are merged in this Contract.

I hereby guarantee the payment of the above. Mrs Chas E. Peck WITNESS

DUPLICATE MUST BE LEFT WITH CUSTOMER.

SCHEDULE	
1 Aj. Elec	
Form #3	135.00
TOTAL	

No. Syracuse 3/20 1920

This is to Certify That I have received of W. A. [redacted] the goods described in this schedule, and for which I agree to Pay Promptly the sum of 135 Dollars, as follows: $20.00 down and 20 for four month payable on the 10th

It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. [redacted] until that time. In default of any payment, or at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon the premises and remove the same without process of law, or the whole amount becomes due at your option.

I hereby agree not to remove said property from No. [redacted] Street [redacted] without written permission from your office.

All verbal agreements are merged in this Contract.

I hereby guarantee the payment of the above. Bertha Hardy [redacted]

DUPLICATE MUST BE LEFT WITH CUSTOMER.

SCHEDULE	
3/23/1920	
1 1600 Agi. Elec.	
Copper tub	$137.50
A rebate of $2.50 if	
terms of this contract	
are kept.	
A discount of $18.50	
allowed on this ac. if	
paid in full on or be-	
fore April 23, 1920.	
TOTAL	

No. Syracuse, N.Y. April 1[illegible]

This is to Certify That I have received of W. A. [redacted] the goods described in this schedule, and for which I agree to Pay Promptly the sum of $137.50 Dollars, as follows: $15.00 down and $15.00 per month payable at 908 S. Salina St. on the 3rd day of the month

It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. [redacted] until that time. In default of any payment, or at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon the premises and remove the same without process of law, or the whole amount becomes due at your option.

I hereby agree not to remove said property from No. 104 West Ave. East Syracuse, N.Y. without written permission from your office.

All verbal agreements are merged in this Contract.

I hereby guarantee the payment of the above. Mrs. H. B. Peck [redacted]

DUPLICATE MUST BE LEFT WITH CUSTOMER.

SCHEDULE	
1900 Agitator	Copper
Electric	135.00
TOTAL	

No. Syracuse, N.Y. Apr. 17. 1920.

This is to Certify That I have received of W. A OSGOOD the goods described in this schedule, and for which I agree to Pay Promptly the sum of 135.00 Dollars, as follows: $10.00 down and the balance at $10.00 per month

It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. OSGOOD until that time. In default of any payment, at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon my premises and remove the same without process of law, or the whole amount becomes due at your option.

I hereby agree not to remove said property from No. 1612 W. Colvin Street Syracuse, N.Y. without written permission from your office.

All verbal agreements are merged in this Contract.

I hereby guarantee the payment of the above. H. H. Williamson WITNESS

DUPLICATE MUST BE LEFT WITH CUSTOMER.

SCHEDULE	
1 Agitator	
Electric Copper	
Washer	
$135.00	
A Rebate of 5% if payments are made according to Contract	
TOTAL	

No. 3/11 1920

This is to Certify That I have received of W. A OSGOOD the goods described in this schedule, and for which I agree to Pay Promptly the sum of 135.00 Dollars, as follows: $20.00 Cash Balance 15.00 monthly payable at the store 908 S. Salina St.

It is agreed that the title of these goods shall not pass until the same are paid for in full, and that they shall remain the property of W. A. OSGOOD until that time. In default of any payment, at the time specified, or in case I violate any part of this Contract, you or your agent may enter upon my premises and remove the same without process of law, or the whole amount becomes due at your option.

I hereby agree not to remove said property from No. 110 Caribou Street Syracuse without written permission from your office.

All verbal agreements are merged in this Contract.

I hereby guarantee the payment of the above. Mrs Cecil Taylor WITNESS

DUPLICATE MUST BE LEFT WITH CUSTOMER.

D-10-4/3

1395

DEFENDANT'S EXHIBIT No. 105

W. A. OSGOOD

LAUNDRY EQUIPMENT O QUALITY

PHONE WARREN 9210

Syracuse, N. Y. 12/5 192

Sold to Mrs H. P. Redman

Address 133 So Midler Ave

Quan.	ARTICLES	$	¢
1	N. Style Jr. Extr	1	25 00
10			

Signature of Purchaser

The above goods have been received in good order

Sign

It is hereby agreed that if purchaser has any complaint to make [illegible] this shipment in any way that he will take it up Osgood, 800 S. Salina St., Syracuse, N. Y.

It is understood and agreed that there are no conditions whatever, verbal or otherwise except as written herein

DEFENDANT'S EXHIBIT No. 147

13396

36

Address only
"The Commissioner of Patents
Washington, D. C."

Letter No.

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON, Sept. 8, 1926.

EXAMINER OF INTERFERENCES:

An interference is found to exist between the following cases, and in respect to the invention therein specified,

CASES

1. Name Cornelius C. Unruh
Post office address Freeman, South Dakota
Title Dolly for Washing Machines
Filed June 18, 1925 Ser. No. 38,109 Pat'd No.
Reissue of Patent No. 1,459,483, granted June 19, 1923, Ser. No. 614,182
Division or continuation of in application filed Jan. 22, 1923
Attorney Williamson, Holf & Williamson of 925 Metropolitan Life Bldg. Minneapolis, Minn.
Associate Att'y
Assignee The Meadows Manufacturing Company to Pfaff & Peffer Jefferson Bldg Peoria, Ill

2. Name Howard W. Snyder
Post office address c/o The Maytag Company, Newton, Iowa.
Title Washing Machines
Filed June 14, 1922 Ser. No. 568,158 Pat'd No.
Division or continuation of
Attorney Wallace D. Lane of Marquette Building Chicago, Illinois
Associate Att'y of
Assignee The Maytag Company of Newton, Iowa

1. Name
Post office address
Title
Filed Ser. No. Pat'd No.
Division or continuation of
Attorney of
Associate Att'y of
Assignee of

INTF NUMBER 54316
INTF. DECLARED OCT 1 1926
STATEMENTS DUE NOV 16 1926

Counts 18, 19 & 20 added - see c/o 33 Paper

INVENTION

Counts-

1. The method of cleansing fabrics in a tub consisting in agitating a washing fluid in such a way as to create positively driven violently flowing currents moving away from and back to the plane of the source of agitation, and also

11 - 15

around the tub in one direction in a plane approximately parallel with the plane of agitation and then causing it to move away from and back to the plane of the source of agitation and in a reverse direction in a plane parallel with the plane of agitation so as to bodily and forcibly cause the fabrics in the tub to travel in substantially the same paths as the fluid, whereby through cleansing of the fabrics is effected without material contact with rubbing surfaces.

Allowed Paper No 17

2. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container, motor-driven means extending through the bottom of the container by which the impeller is so driven as to violently force water in the container laterally and upwardly in a gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be suspended by the water and forced in one direction and then another and thoroughly cleaned while thus suspended.

(2) 6. A washing machine comprising in combination, a container having a substantially uninterrupted surface, a rotary reciprocatory disk-like impeller mounted through the bottom of the container, so constructed and arranged that when water and materials to be cleaned are placed in the container and the impeller is reciprocated, the water will first be violently forced laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed gyratory direction, so that the materials being cleaned will be suspended by the movement of the water, and the water forced through and around the materials so thoroughly cleanses them, while said materials are substantially out of rubbing contact with the mechanical parts of the machine, and motor-driven means for rapidly driving the impeller.

Allowed Paper No 17

4. A washing machine comprising in combination a container, a rotary reciprocating clothes impeller in said container, the said impeller having an axially extended working surface which is sufficient in extent relative to the depth of the container to positively and vigorously whip the washing fluid laterally and vertically in an opposed direction, whereby the washing fluid is driven violently through the clothes, and motor-driven means for imparting rapid rotary reciprocative movements to said impeller.

(3) 5. In a washing machine the combination of a tub for containing a cleansing substance and the materials to be cleansed, said tub having an outwardly and upwardly inclined portion, an impeller cooperating with the said inclined portion of the tub to force said cleansing substance and materials to be cleansed outwardly in a direction substantially parallel with said inclined portion, and power means for oscillating said impeller.

(4) 6. In a washing machine the combination of a tub adapted to contain wash water and goods to be washed, said tub having a flared portion, a liquid impeller in said tub having a depressed portion, said liquid impeller co-operating with said flared portion to swirl said wash water and goods with a substantially gyratory movement, and power

means to alternately rotate said liquid impeller.

(5) 5. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a liquid impeller, mechanism driven by said power means for oscillating said liquid impeller, said liquid impeller having flanges and a radially depressed portion operative to upwardly swirl said cleaning substance and material.

(6) 6. In a washing machine comprising a driving power means, the combination of a tub for containing washing and washable materials, a liquid impeller, means operable to alternately rotate said liquid impeller, said liquid impeller being provided with an upstanding flange and a depressed portion on each side of said flange and operative to swirl said materials with a substantially gyratory movement.

(7) 9. In a washing machine comprising driving power means, the combination of a tub for containing a cleansing substance and materials to be cleansed, a liquid impeller, mechanism driven by said power means for alternately rotating said liquid impeller, said liquid impeller having upwardly and radially extending flanges and a radially depressed surface operative to upwardly swirl said cleansing substance and materials.

Rejected 10. In a washing machine comprising driving power means, the combination of a liquid impeller operated by said means, a tub for containing water and goods to be washed, said tub being relatively shallow with respect to its horizontal dimension, said liquid impeller operable to maintain said goods in suspension above the impeller in the water while being swirled about said tub with said water.

Rejected 11. In a washing machine comprising driving power means, the combination of a liquid impeller operated by said means, a tub for containing wash water and goods to be washed, said tub having a tapered lower portion, said liquid impeller having a flared portion, said tapered and flared portions co-operating to swirl said water and goods with a substantially gyratory movement in said tub.

(8) 12. In a washing machine comprising driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a centrally raised portion and radially depressed portion, and operable to swirl said materials with a substantially gyratory movement.

(9) 13. In a washing machine having driving power means, the combination of a tub adapted to contain washing and washable materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a centrally raised portion, a radially depressed portion and flanges extending radially from said centrally raised portion, said liquid impeller operable to swirl said materials with a substantially gyratory movement in said tub.

(10) 14. In a washing machine having driving power means, the combination of a tub adapted to contain washing and wash-

able materials, a liquid impeller in said tub and operated by said means, said liquid impeller having a central conoidal portion, an inclined peripheral portion and an intermediate trough portion, said liquid impeller operating to swirl said materials with a substantially gyratory movement in said tub.

(11) 16. In a washing machine comprising a driving power means, a tub, an alternating rotary liquid impeller having a plate formed with an annular depression, a raised central portion and upstanding flanges in said depression, said plate, depression, central portion and flanges operating on the contents of the tub to give the contents a gyratory movement.

17. In a washing machine comprising driving power means, a tub, a liquid impeller therein and operated by said means, the liquid impeller and tub having cooperating flared portions for upwardly swirling the contents of the tub.

Divided Patent No 17

17. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a dish-shaped member and a substantially cylindrical stem rising from and merging into the central portion thereof and terminating in an upper rounded end, said stem having spaced ribs extending vertically along its sides upwardly tapered throughout the length of said stem and extending outwardly across the dish-shaped member.

18. A dolly for a washing machine comprising a cup-shaped disk with a frusto-conical portion rising from its center having a substantially cylindrical stem projecting centrally thereabove and terminating in a rounded top, said stem having radial ribs projecting therefrom and extending along the sides thereof, said ribs being tapered throughout the length of said stem and extending in lobe-shaped form across the surface of said disk.

(12) 19. An agitating member for a washing machine comprising a cup-shaped disk having a frusto-conical portion rising from the center thereof, the vertical elements of which are concave so that the surface of said portion merges into the surface of said disk, and a round upwardly tapering portion projecting above said frusto-conical portion and terminating in a rounded surface, and narrow radial wings projecting from said latter portion and extending along the sides thereof and across the surface of said disk and having rounded outer edges merging into the concave surface of said disk.

20. A dolly for a washing machine comprising an annular trough, a stem rising centrally from said trough and having a plurality of circumferentially spaced radial wings projecting therefrom and extending along its sides and across the surface of said trough the top surface of said wings above said trough curving downwardly and inwardly.

Divided Patent No 17

21. A dolly for a washing machine comprising a dish-shaped member and a rounded stem rising from and merging into the central portion thereof and terminating in an upper rounded end, spaced ribs extending vertically along said stem and merging into the upper rounded end thereof and extending across the dish-shaped member at the lower ends in lobe-shaped form whereby the upper surfaces thereof shape said member are concave.

1400

Amended Paper No. 17

24. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle comprising a circular disk-like member having a stem rising from and merging into its central portion, and ribs extending vertically from the upper end of said stem downwardly therealong and across the surface of said disk-like member.

(14) 26. A rotatable dolly for a washing machine adapted to be disposed in a liquid containing receptacle comprising a dish-shaped member having a central upstanding tapered stem with a rounded upper end, ribs extending across said dish and upwardly along the side of said stem and having rounded upper edges merging into the rounded surface of said stem.

Amended Paper No 17

24. A tub for a washing machine, comprising a bottom portion, side portions, and an upwardly inclined portion between the bottom and side portions, and means co-operating with the inclined portion for causing the contents of the tub to travel upwardly thereon.

25. In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator consisting of a substantially disk-like, imperforate body, and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator.

(15) 26. In a washing machine an agitator and power means for imparting alternate rotative movement thereto, said agitator consisting of a substantially disk-like imperforate body and a plurality of liquid impelling projections extending from one face thereof, said projections being of a maximum depth contiguous to the periphery of said body and having their free edges inclined inwardly to the center of the agitator, leaving the central portion of said body free of water impelling projections.

Amended Paper No 17

27. In a washing machine, the combination of a tub, an actuating shaft upstanding through the bottom of said tub, a block on said shaft above the tub bottom and an agitator having a centrally disposed upstanding dome and liquid impelling means radiating therefrom, said dome being provided at its underside with a socket adapted to fit over said block.

28. In a washing machine, the combination of a tub, an actuating shaft upstanding through the bottom of said tub, a block secured to said shaft above the tub bottom and an agitator having a centrally disposed upstanding dome and liquid impelling means radiating therefrom, said dome being provided with a socket to receive said block for forming a driving connection between said shaft and agitator.

(16) 29. In a washing machine, a tub having side walls and a bottom, a driving shaft extending through said bottom into the tub, an agitator fixed to said shaft to oscil-

11

late therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular base having an upstanding central portion, blades extending upwardly from the upper face of said base, the blades being of greatest height adjacent the marginal edge of the base, decreasing in height toward the center and merging into said upstanding central portion, the union between the agitator and the shaft permitting removal of the former from the latter by an upward movement, the oscillation of the agitator causing the blades to set up a violent movement of the fluid and tub contents outwardly away from the agitator, upwardly, inwardly, and then back toward the agitator, there also being superposed on this circulatory movement a movement of the fluid and tub contents first in one direction circumferentially of the tub and then in the other, so that the articles being washed will be thoroughly cleansed without any material rubbing of the blades thereagainst.

(17) 30. In a washing machine, a tub, a driving shaft extending into the tub, an agitator secured to said shaft to oscillate therewith, power means for oscillating said shaft and agitator, said agitator comprising a substantially circular body portion having blades extending therefrom on the face presented to the material being washed, the blades adjacent the marginal edge of the body portion being of a substantial dimension in a direction at right angles of the body portion, said body portion being free of any holes or openings of substantial dimensions, said blades and adjacent portions of the body portion of the agitator when the agitator is oscillated forcing the fluid in the tub, and material being washed, violently outwardly from the edge of the agitator whereby it will flow in circulatory paths away from the agitator, along the sides of the tub, then inwardly and back to the agitator, this cycle being continuously repeated.

Issued Paper 17

31. A dolly for a washing machine adapted to be disposed in a liquid containing receptacle with its top portion well below the top of said receptacle, comprising a lower disk-like portion having a stem rising therefrom and merging into said disk-like portion at its lower end and circumferentially spaced ribs carried by said dolly and extending radially of said disk-like member.

For added counts 18, 19 & 20 see Paper No. 33

The relation of the counts of the interference to the claims of the respective parties is as follows:

Counts	Snyder	Unruh
1	1	15
2	5	17
3	8	19
4	9	20
5	10	21

20

(Con't)

	Counts	Saylor	Unruh
6		11	22
7		12	23
		13	24
		14	25
		15	26
9		16	27
10		17	28
11		19	29
		20	30
		21	1
		22	2
12		23	3
13		24	4
		25	5
		26	6
14		27	9
		28	31
		29	32
15		30	33
		31	34
		32	35
16		35	36
17		36	37
		38	14

added cts 18, 19 & 20 see Paper No. 33

Counts compared

I. J. Mitchell
Actg Examiner.

D-142
87

1103

STATEMENT OF Snyder
FILED Nov. 12 1926
APPROVED May 19 1926.
D

IN THE UNITED STATES PATENT OFFICE

(Original Court,

CORNELIUS C. UNRUH
-vs-
HOWARD F. SNYDER

Interference No. 54,318.

PRELIMINARY STATEMENT OF HOWARD F. SNYDER

STATE OF IOWA,
County of Jasper } ss.

HOWARD F. SNYDER, of Newton, in the County of Jasper, and State of Iowa, being duly sworn, deposes and says that he is a party to the interference declared by the Commissioner of Patents on or about October 1, 1926, between Howard F. Snyder's application for Letters Patent filed June 14, 1922, Serial No. 568,158, for Washing Machines, and the application of Cornelius C. Unruh, of Freeman, South Dakota, Serial Number and date of filing not known;

That he conceived the invention set forth in the declaration of interference on or about January 20, 1915;

That he first made drawings of the invention on or about January 30, 1915;

That he first disclosed and explained the invention to others on or about January 30, 1915;

That he first made a written description of said invention on or about May 17, 1921;

That he first embodied the invention and reduced the same to practice in a full sized machine, which was completed on or about January 27, 1915;

That the said device was first successfully operated in the city of Newton, County of Jasper, and State of Iowa, on or about January 27, 1915, and that he has since continued to use the same, and that a considerable number of washing machines embodying this invention have been manufactured and sold.

Howard F. Snyder

Subscribed and sworn to before me, this 21st day of October, 1926.

Dwight M. Hatfield
Notary Public.
My Commission Expires July 4th, 1927

JCM/CLB

54316 Letter No. 33

DEPARTMENT OF COMMERCE

UNITED STATES PATENT OFFICE

WASHINGTON

Interference No. 54,316.
Unruh vs. Snyder.

Examiner of Interference.

54316
MAR 17 1928
APR 23 1928

Sir:

Pursuant to the decision of Law Examiner, dated Jan. 26, 1928, the following counts are added to the issue of the above entitled interference:

18. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container having upstanding flanges thereon so arranged as to violently force water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be substantially suspended by the water and thoroughly cleaned while thus suspended, and motor driven means extending through the bottom of the container to rotatably reciprocate the impeller.

19. In a washing machine, a tub for containing wash water and goods to be washed, an oscillatory disk-like agitator in said tub near the bottom thereof and having a plurality of upstanding water-impelling projections extending from one face thereof, said projections being of substantial height contiguous to the periphery of the agitator and decreasing in height toward the center whereby side faces of substantial area are provided, and while the agitator is oscillated the water and goods will be vigorously forced laterally upwardly in gyratory paths to violently force the water through, between and around the goods and thoroughly cleanse them while they are sustained in the water free from any substantial contact with rubbing surfaces, and motor-driven means for oscillating the agitator.

20. In a washing machine, a tub having a substantially uninterrupted inner surface and adapted to contain cleansing liquid and materials to be washed, the bottom of the tub merging smoothly into the sides, an oscillatory liquid impeller mounted adjacent the bottom of the tub, having on its upper surface upstanding wing-like means of substantial height and length so constructed and arranged that when the impeller is given a rapid rotary oscillatory movement the cleansing liquid and materials to be washed will be violently forced laterally from the impeller then upwardly along the side of the tub, then away from

11 94

the tub side and back toward the impeller, this cycle being continuously repeated to force the cleansing liquid through and around the materials to be washed to thoroughly cleanse them while they are substantially out of rubbing contact with the impeller, and motor-driven means for imparting to said impeller a rapid rotary oscillatory movement.

The relation of the counts is as follows:

Counts	Unruh	Snyder
18	38	39
19	39	44
20	40	47

The relation of the parties remains unchanged.

J. A. Shackford

Examiner.

S4316-3734

STATEMENT OF Snyder.
FILED April 11 1928
APPROVED May 1928

D

UNITED STATES PATENT OFFICE

(added counts)

CORNELIUS C. UNRUH

-vs-

HOWARD F. SNYDER

Interference No. 54,316

Washing Machines

PRELIMINARY STATEMENT OF LETTIE SNYDER, EXECUTRIX OF THE ESTATE OF HOWARD F. SNYDER, DECEASED.

STATE OF IOWA
County of Jasper } ss

Lettie Snyder, of Newton, in the County of Jasper, State of Iowa, being duly sworn deposes and says that she is the Executrix of the Estate of Howard F. Snyder, deceased, between whose application Serial No. 568,158, filed June 14, 1922, for Washing Machines, and the application of Cornelius C. Unruh, of Freeman, South Dakota, Serial No. 38,109, filed June 15, 1925, the Honorable Commissioner of Patents declared an interference on or about November 15, 1926, and in which interference on or about March 17, 1928 the following counts were added:

18. A washing machine comprising in combination, a container having a substantially uninterrupted inner surface, a rotary reciprocatory disk-like impeller near the bottom of the container having upstanding flanges thereon so arranged as to violently force water in the container laterally and upwardly in one gyratory direction and then laterally and upwardly in an opposed direction, whereby the materials being washed will be substantially suspended by the water and thoroughly cleaned while thus suspended, and motor driven means extending through the bottom of the container to rotatably reciprocate the impeller.

19. In a washing machine, a tub for containing wash water and goods to be washed, an oscillatory disk-like agitator in said tub near the bottom thereof and having a plurality of upstanding water-impelling projections extending from one face thereof, said projections being of substantial height contiguous to the periphery of the agitator and decreasing in height toward the center whereby side faces of substantial area are provided, and while the agitator is oscillated the water and goods will be vigorously forced laterally upwardly in gyratory paths to violently force the water through, between and around

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1408

the goods and thoroughly cleanse them while they are sustained in the water free from any substantial contact with rubbing surfaces, and motor-driven means for oscillating the agitator.

20. In a washing machine, a tub having a substantially uninterrupted inner surface and adapted to contain cleansing liquid and materials to be washed, the bottom of the tub merging smoothly into the sides, an oscillatory liquid impeller mounted adjacent the bottom of the tub, having on its upper surface upstanding wing-like means of substantial height and length so constructed and arranged that when the impeller is given a rapid rotary oscillatory movement the cleansing liquid and materials to be washed will be violently forced laterally from the impeller then upwardly along the side of the tub, then away from the tub side and back toward the impeller, this cycle being continuously repeated to force the cleansing liquid through and around the materials to be washed to thoroughly cleanse them while they are substantially out of rubbing contact with the impeller, and motor-driven means for imparting to said impeller a rapid rotary oscillatory movement.

The said Lettie Snyder further deposes and says:

That the said Howard F. Snyder conceived the invention set forth in the above stated additional counts on or about January 20, 1915;

That drawings of the invention set forth in said additional counts were first made on or about January 20, 1915;

That the said Howard F. Snyder first disclosed and explained the invention of said additional counts to others on or about January 20, 1915;

That the said Howard F. Snyder first made a written description of the invention of said additional counts on or about May 17, 1921;

That the said Howard F. Snyder first embodied the invention of said additional counts and reduced the same to practice in a full-sized machine which was completed on or about January 27, 1915;

That the said device was first successfully operated in the City of Newton, County of Jasper, and State of Iowa, on or about January 27, 1915, and that The Maytag Company, the assignee of the entire interest in and to the said Snyder

11 27

application has since continued to use the same, and that a large number of washing machines embodying the invention of said additional counts have been manufactured and sold.

Lettie Snyder.
Executrix of the Estate of Howard F. Snyder, Deceased.

Subscribed and sworn to before me this 7th day of April, 1928.

Lewis H. Jones.
Notary Public.

4228

Final Decree (Maytag Company v. Easy Washing Machine Corporation).

(Filed June 9, 1937.)

At a Stated Term of the District Court of the United States in and for the Southern District of New York, held at the United States Court House, Foley Square, in the Borough of Manhattan, City and State of New York, on the 8th day of June, 1937.

4229

HONORABLE ALFRED C. COXE,
United States District Judge.

THE MAYTAG COMPANY, Plaintiff, vs. EASY WASHING MACHINE CORPORATION, Defendant.	Equity No. 75-202.

4230

This cause came on to be heard at this term and was argued by counsel and thereupon upon consideration thereof it was,

ORDERED, ADJUDGED AND DECREED as follows: viz.:

1. That claims Nos. 23, 26 and 29 of United States Letters Patent 1,866,779, issued July 12, 1932, to The Maytag Company as assignee, of Howard F. Snyder, are invalid.

Final Decree (Maytag Company v. Easy Washing Machine Corporation). 4231

2. That the Bill of Complaint herein be, and the same is, hereby dismissed.

3. That the Defendant recover of the Plaintiff its costs in this Court to be duly taxed and that the Defendant have execution therefor.

ALFRED C. COXE,
United States District Judge.

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Findings of Fact and Conclusions of Law (Maytag Company v. Easy Washing Machine Corporation).

(Filed June 9, 1937, as corrected June 28, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Plaintiff, vs. EASY WASHING MACHINE CORPORATION, Defendant.	In Equity No. 75-202.
THE MAYTAG COMPANY, a corporation, Plaintiff, vs. HURLEY MACHINE CO. and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants.	In Equity No. 81-257.

4235

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The issues in the above suits having duly come on to be heard by this Court at a Stated Term, the following Findings of Fact and Conclusions of Law are filed pursuant to Equity Rule No. 70½.

FINDINGS OF FACT.

1. Plaintiff, The Maytag Company, is the sole owner of the Snyder Letters Patent in suit No.

4237

1,866,779, issued to it July 12, 1932, Claims 23, 26 and 29 of which are here asserted. Plaintiff's Exhibits 9, 10 and 11 are specimens of the machines made by the plaintiff which embody the structures shown in said patent.

2. Defendant, The Easy Company, is a corporation organized and existing under the laws of the State of Delaware and has an office and a regular and established place of business in the City of New York, State of New York, within the Southern District of New York, where it committed the acts complained of in this suit.

4238

3. The defendants, Hurley Machine Company and Electric Household Utilities Corporation are corporations existing under and by virtue of the laws of the State of Illinois, and each has a regular and established place of business in the City of New York, State of New York, in the Southern District of New York, where said corporations committed the acts complained of.

4239

4. That the defendant, The Easy Company, subsequent to notice of alleged infringement of the Snyder patent in suit and before the filing of this suit, made and sold washing machines of which Plaintiff's Exhibit 3 is a specimen.

5. That after notice of alleged infringement of the Snyder patent and before the filing of this suit, defendants, The Hurley Company and Electric Household Utilities Corporation sold from their regular established place of business in New York washing machines of which Plaintiff's Exhibit 4 is a specimen.

6. That by its opinion, rendered November 30, 1936, the Circuit Court of Appeals of the Second Circuit, in the suit of Plaintiff against The Brooklyn Edison Company held Claims 23, 26 and 38 of the said Snyder patent in suit anticipated by the prior art and invalid.

4241 7. That the evidence offered by Plaintiff herein in support of its contention that a patentable invention is described and claimed in the Snyder patent in suit does not differ in substance from that which was submitted to the Court of Appeals in the said suit against The Brooklyn Edison Company.

8. That the Snyder patent in suit is anticipated by the Davis patent No. 1,240,826, the Doughty & Davis patent No. 1,496,305, commercial machines made under said patents by the Nineteen Hundred Company of Binghamton, New York, known respectively as Form 1, Form

4242 2, Form 3 and Form 4 machines, and the Jardine British patent No. 18,202 of 1891.

CONCLUSIONS OF LAW.

1. Letters Patent No. 1,866,779, in suit are invalid as to Claims 23, 26 and 29 thereof.

2. The Bills of Complaint are dismissed with costs to the respective defendants.

ALFRED C. COXE,
United States District Judge.

New York, N. Y.
Dated, June 8, 1937.

4243

Notice of Lodgment of Narrative Statement of the Evidence (Maytag Company v. Easy Washing Machine Corporation).

(Filed Oct. 8, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Plaintiff-Appellant, vs. EASY WASHING MACHINE CORPORATION, Defendant-Appellee.	In Equity No. 75-202.
THE MAYTAG COMPANY, a corporation, Plaintiff, vs. HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants-Appellees.	In Equity No. 81-257.

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MESSRS. PENNIE, DAVIS, MARVIN & EDMONDS,
165 Broadway,
New York City.

PLEASE TAKE NOTICE that on October 8th, 1937, we shall lodge with the Clerk of the court the narrative statement of evidence, a copy

Notice of Lodgment of Narrative Statement of the Evidence (Maytag Company v. Easy Washing Machine Corporation).

of which has been previously handed you, as amended in accordance with the corrected pages handed you herewith.

We shall also file with the Clerk our praecipe, copy of which is attached herewith.

We shall present the narrative so amended to the District Court for approval on October 18th, 1937.

WALLACE R. LANE,
Counsel for Plaintiff-Appellant.

Service of the foregoing Notice and receipt of a copy thereof and the corrections therein referred to acknowledged this 8th day of October, 1937.

PENNIE, DAVIS, MARVIN & EDMONDS,
Counsel for Defendants-Appellees.

4249

Order Approving Praecipe and Amending Narrative Statement of the Evidence (Maytag Company v. Easy Washing Machine Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY,
a corporation,
Plaintiff-Appellant,

vs.

EASY WASHING MACHINE
CORPORATION,
Defendant-Appellee.

In Equity
No. 75-202.

4250

This cause having come on to be heard upon the defendant-appellee's objections to plaintiff-appellant's Narrative Statement of Evidence as lodged, and upon defendant-appellee's praecipe in opposition to the praecipe filed by plaintiff-appellant, and counsel for the respective parties having been heard, it is

4251

ORDERED, ADJUDGED AND DECREED:

1. That the Narrative Statement of Evidence as lodged on October 8, 1937, be amended in accordance with the defendant-appellee's objections and amendments filed October 16, 1937, excepting the following amendment:

"492, at the end of the page, insert Minutes of the Trial beginning with line 15 on

4252 *Order Approving Praecipe and Amending Narrative Statement of the Evidence (Maytag Company v. Easy Washing Machine Corporation).*

page 150 through page 178-a, after making the following corrections in these Minutes:

Page 151, change "BEAUBIEN" to—JEFFERY—.

4253 Page 158, 3rd line from bottom, change "BEAUBIEN" to—JEFFERY—.

Page 169, lines 5 and 6, change "Davis" to—Snyder—.

Page 175, line 5, change "Snyder" to —the art—.

Page 176, 4th line from bottom, change "from" to—than—.

4254 Page 176, line 2 from bottom, change "a support for" to—as support for—.

2. That plaintiff-appellant's praecipe filed on October 8, 1937, be approved and defendant-appellee's counter-praecipe filed on October 16, 1937, be disapproved.

ALFRED C. COXE,
United States District Judge.

Dated: November 5th, 1937.

4255

Order Approving Narrative Statement of the Evidence (Maytag Company v. Easy Washing Machine Corporation).

UNITED STATES DISTRICT COURT,

THE MAYTAG COMPANY, a corporation, Plaintiff-Appellant, vs. EASY WASHING MACHINE CORPORATION, Defendant-Appellee.	In Equity No. 75-202.

4256

The Narrative Statement of Evidence lodged by the plaintiff-appellant herein on October 8, 1937, and amended in accordance with my order of November 5th, 1937, is hereby settled, approved and allowed and is ordered filed as a statement of the evidence to be included in the record on appeal as provided by Equity Rule No. 75. Said statement of evidence, together with the exhibits therein referred to and the documents specified in the praecipe, constitute all of the evidence offered by the parties or considered by the Court in this case.

4257

ALFRED C. COXE
United States District Judge.

Dated: November 5th, 1937.

4258

Petition for Appeal (Maytag Company v. Easy Washing Machine Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation,
Plaintiff,
vs.
EASY WASHING MACHINE CORPORATION,
Defendant.

In Equity No. 75-202.

4259

The above named plaintiff, The Maytag Company, considering itself aggrieved by the final decree herein entered June 6, 1937, and filed in the office of the clerk of the United States District Court for the Southern District of New York on the same day, hereby appeals from said decree to the United States Circuit Court of

4260 Appeals for the Second Circuit for the reasons specified in the assignment of errors filed herewith, and prays that the appeal may be allowed and a Citation may be issued directed to the defendant, Easy Washing Machine Corporation, commanding it to appear before the United States Circuit Court of Appeals for the Second Circuit to do and receive what may appertain to justice in the premise; and that a transcript of the pleadings, proceedings, testimony, exhibits and orders together with a copy of the opinion of this court, and the findings of fact and conclusions of law filed in this case, upon which said

final decree was entered, duly authenticated by the clerk of the court, be transmitted to the United States Circuit Court of Appeals for the Second Circuit under the rule in such cases made and provided.

Plaintiff further prays that an order fixing the security to be given be made and that the same stay the execution for costs herein.

THE MAYTAG COMPANY,
JOHN F. RYAN, 4262
Solicitor.

By (Sgd.) WALLACE R. LANE,
of Counsel.

July , 1937.

Order Allowing Appeal.

IT IS ORDERED this 14th day of July, 1937, that the foregoing appeal be allowed. 4263

IT IS FURTHER ORDERED that the bond on appeal be fixed at the sum of Two Hundred and Fifty Dollars ($250.00) and act as a stay of the execution for costs herein.

HENRY W. GODDARD,
United States District Judge.

New York, N. Y.

4264

Assignment of Errors (Maytag Company v. Easy Washing Machine Corporation).

(Filed July 14, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Plaintiff, vs. EASY WASHING MACHINE CORPORATION, Defendant.	In Equity No. 75-202.

4265

Now comes the plaintiff, The Maytag Company, and in support of its petition for appeal from the final decree entered herein June 6, 1937, asserts as an assignment of errors that the Court erred in the following respects to-wit:

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1. In holding and decreeing that claims 23, 26 and 29 of United States Letters Patent No. 1,866,779 issued July 17, 1932, to The Maytag Company as assignee of Howard F. Snyder are invalid and in failing to hold that the said claims are good and valid in law.

2. In entering a decree dismissing the bill of complaint and in failing to find and decree that said patent is valid and infringed by defendant and that plaintiff is entitled to the relief prayed in the Bill of Complaint.

3. In holding and decreeing that the defendant recover of the plaintiff its costs in this court. 4267

4. In finding and holding that the evidence offered by plaintiff herein in support of its contention that a patentable invention is described and claimed in the Snyder patent in suit does not differ in substance from that which was submitted to the Court of Appeals in the suit of The Maytag Company against Brooklyn Edison Company and in failing to hold that such evidence required a finding of validity of said claims of said patent, and in not holding that in the present case the plaintiff offered evidence of substantially different character which if before the Court of Appeals in the Brooklyn Edison case, would have resulted in a decision holding the patent valid and infringed. 4268

5. In finding and holding that the Snyder patent in suit is anticipated by the Davis patent No. 1,240,826, the Doughty and Davis patent No. 1,496,305, the commercial machines made under said patent by the Nineteen Hundred Company, Binghamton, New York, known respectively as Form 1, Form 2, Form 3 and Form 4 machines, and the Jardine British patent No. 18,202 of 1891. 4269

(Sgd.) WALLACE R. LANE,
of Counsel.

JOHN F. RYAN,
Solicitor for Plaintiff.

4270

Bond for Costs (Maytag Company v. Easy Washing Machine Corporation).

KNOW ALL MEN BY THESE PRESENTS:

That we, The Maytag Company, as principal and Continental Casualty Company, as surety, are held and firmly bound unto Easy Washing Machine Corporation in the full and just sum of Two Hundred Fifty ($250.00) Dollars to be paid to the said Easy Washing Machine Corporation, their attorneys, executors, administrators, or as-
4271 signs; to which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, firmly by these presents. Sealed with our seals and dated this 16th day of July in the year of our Lord one thousand nine hundred and thirty-seven.

WHEREAS, lately at a session of the District Court of the United States for the Southern District of New York, in a suit pending in said Court, between The Maytag Company, plaintiff,
4272 and Easy Washing Machine Corporation, defendant, a decree was rendered against the said, The Maytag Company and the said Maytag Company having obtained from said Court an order allowing an appeal to the United States Circuit Court of Appeals for the Second Circuit, and filed a copy thereof in the Clerk's Office of the said Court to reverse the decree of the aforesaid suit, and a citation directed to the said Easy Washing Machine Corporation citing and admonishing it to be and appear at the United States Circuit Court of Appeals for the Second Circuit within thirty days from the date hereof.

Bond for Costs (Maytag Company v. Easy Washing Machine Corporation. 4273

Now, the condition of the above obligation is such, that if the said, The Maytag Company shall prosecute its said appeal to effect, and shall answer all damages and costs that may be awarded against it if it fail to make its plea good, then the above obligation to be void; otherwise to remain in full force and virtue.

Sealed and Delivered in the presence of: 4274

E. L. NELSON

THE MAYTAG COMPANY.
ROY A. BRADT (Seal)
Vice-President

CONTINENTAL CASUALTY COMPANY. (Seal)

INEZ MAGEE

By H. W. LAMP (Seal)
H. W. LAMP—Attorney-in-Fact.

4275

Approved by:

_____

_____

4276

Citation (Maytag Company v. Easy Washing Machine Corporation).

(Filed July 22, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

BY THE HONORABLE HENRY W. GODDARD, U. S. D. J.

4277

THE MAYTAG COMPANY,
a corporation,
Plaintiff,

vs.

EASY WASHING MACHINE
CORPORATION,
Defendant.

In Equity
No. 75-202.

THE UNITED STATES OF AMERICA, ss:

To: EASY WASHING MACHINE CORPORATION:

4278

GREETINGS:

You are hereby cited and admonished to be and appear at a session of the United States Circuit Court of Appeals for the Second Circuit, to be holden in the United States Court House, Foley Square, New York, N. Y., thirty (30) days from the date hereof, pursuant to an appeal duly allowed and filed in the office of the Clerk of the District Court of the United States for the Southern District of New York, from the final decree of said District Court of the United States for the Southern District of New York,

which was entered in suit, In Equity No. 75-202, wherein The Maytag Company is Plaintiff-Appellant and you, the said Easy Washing Machine Corporation, is Defendant-Appellee, to show cause, if any there be, why the final decree rendered against the said plaintiff, The Maytag Company, in said suit should not be corrected, and why speedy justice shall not be done to the parties in this behalf.

Witness the Honorable HENRY W. GODDARD, one of the Judges of the District Court of the United States for the Southern District of New York, this 20th day of July, in the year of our Lord, One Thousand Nine Hundred Thirty-seven, of the Independence of the United States, the One Hundred Sixty-second.

HENRY W. GODDARD,
United States District Judge.

Copy of the above citation received this 22nd day of July, 1937.

PENNIE, DAVIS, MARVIN & EDMONDS,
Solicitors for Defendant-Appellee.

4282

Praecipe (Maytag Company v. Easy Washing Machine Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, Appellant, vs. EASY WASHING MACHINE CORPORATION, Appellee.	In Equity No. 75-202.

4283

TO THE CLERK OF THE UNITED STATES DISTRICT COURT, FOR THE SOUTHERN DISTRICT OF NEW YORK:

You are hereby requested to certify a transcript of record to be transmitted to the United States Circuit Court of Appeals for the Second Circuit pursuant to the appeal heretofore taken in this case, and include in said transcript the following:

4284

1. The Bill of Complaint filed April 3, 1933.
2. Order for Bill of Particulars filed April 29, 1933.
3. Plaintiff's Bill of Particulars filed May 20, 1933.
4. Answer filed June 9, 1933, with amendment filed February 7, 1935.
5. Stipulation filed May 15, 1934.
6. Supplemental Bill of Complaint filed December 11, 1935, as amended by Supplemental Bill of Complaint filed March 21, 1936.

Praecipe (Maytag Company v. Easy Washing Machine Corporation). 4285

7. Answer to Amended Supplemental Bill of Complaint filed May 19, 1936.
8. Amendment to original Bill of Complaint filed March 2, 1937.
9. Stipulation filed April 22, 1937, re use of certain testimony and exhibits from Brooklyn Edison case.
10. Decree filed June 9, 1937.
11. Findings of Fact and Conclusions of Law filed June 9, 1937, as corrected June 28, 1937. 4286
12. Notice of lodgment of narrative statement of evidence.
13. Condensed statement of evidence including the testimony of plaintiff's witnesses:

    Walter Bones
    Lucien I. Yeomans and
    Winton G. Wilks,

    given at the trial; the testimony of plaintiff's witnesses: 4287

    George L. Miller
    William J. Elliott (except recalled)
    Joe Stephen
    David L. Mooar
    Roy A. Bradt
    John E. Herbst
    Charles V. Thornton and
    Frederick F. Mason,

    defendant's witnesses:

    Watson A. Osgood and
    Laura Wensley,

stipulated from the cause entitled The Maytag Company vs. Brooklyn Edison Company, Inc., U. S. D. C., E. D. N. Y., Equity No. 6888; and the depositions of:

James A. McCoy
Ray L. Ryan
Gladys M. Ryan
Sherman H. Weeks
4289 Esther S. Ryan
Chester F. Grober
Oscar George Beushausen
William W. Winger and
Fred L. Maytag,

offered on behalf of the plaintiff and the depositions of:

Thomas W. Behan
George L. Davis
Robert D. Quinn
4290 William Green
Vernon J. Wooster
Herman W. Doughty
William S. Miller
John N. Lint
Charles F. Jenkins
Walter H. Barnhart
Verne M. Barnhart
Harry E. Barnhart
Mary Carr and
George A. Haag,

offered on behalf of the defendant, stated in narrative form except such portions of

the testimony as have been reproduced in the exact words of the witnesses at the desire of the parties or at the direction of the Court.

14. Order approving narrative statement of the evidence.
15. Plaintiff's Exhibits: 1, 2, 3A, 4A, 5, 9A, 10A, 11A, 12, 13A, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26 (pages 56, 57, 60 and 61), 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 4292 39, 40, 41, 42, 43, 44, 45, 46, 47, 47A, 51, 51A, 51B, 52, 53, 55, 56, 57, 58, 59, 60, 61, 62, 63 (pages 4, 7 and 10), 168, 170C, 170D, 171, 174, 175, 175A, 176, 177, 183, 184, 188, 209, 210, 211, 212.
16. Defendant's Exhibits: B, C, L, W, X, Y, Z (pages 53, 54 and 55), 1, 3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 18, 19, 25, 61, 62, 63, 64, 65, 65, 66, 66, 67, 68, 69, 70, 81, 101, 102, 104, 105. 147.
17. Petition for appeal and order allowing appeal. 4293
18. Assignments of Error.
19. Cost bond on appeal.
20. Citation.
21. This Praecipe.
22. Stipulation and order as to the correctness of the record.
23. Clerk's Certificate.

The following exhibits shall be considered as physical exhibits and be transmitted as such to the Circuit Court of Appeals:

Plaintiff's Exhibits: 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 26, 48, 48A, 48B, 48C,

4294 *Praecipe (Maytag Company v. Easy Washing Machine Corporation).*

48D, 49, 50, 54, 63, 169, 170, 170A, 170B, 172, 172A, 173, 182.

Defendant's Exhibits: A, D, M, Z, 2A, 4, 8, 16, 17, 20, 21, 22, 23, 24, 26, 27, 69, 67, 71, 72, 103.

WALLACE R. LANE,
Counsel for Plaintiff-Appellant.

4295 Oct. 8, 1937.

JOHN F. RYAN,
Solicitor for Plaintiff-Appellant.

The foregoing Praecipe for the Transcript of Record on Appeal is hereby approved by Defendant-Appellee.

Solicitor for Defendant-Appellee.

4296

4297

Final Decree (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

(Filed June 9, 1937.)

At a stated term of the District Court of the United States in and for the Southern District of New York held at the United States Court House, Foley Square, in the Borough of Manhattan, City and State of New York, on the 8th day of June, 1937. 4298

HONORABLE ALFRED C. COXE,
United States District Judge.

THE MAYTAG COMPANY,
Plaintiff,

vs.

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION,
Defendants.

Equity No. 81-257.

4299

This cause came on to be heard at this term and was argued by counsel and thereupon upon consideration thereof it was

ORDERED, ADJUDGED AND DECREED as follows: viz.:

1. That claims Nos. 23, 26 and 29 of United States Letters Patent 1,866,779, issued July 12,

4300 *Final Decree (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).*

1932, to the Maytag Company as assignee, of Howard F. Snyder, are invalid.

2. That the Bill of Complaint herein be, and the same is, hereby dismissed.

3. That the Defendants recover of the Plaintiff its costs in this Court to be duly taxed, and that the Defendants have execution therefor.

4301

ALFRED C. COXE,
United States District Court.

4302

4303

Findings of Fact and Conclusions of Law (Maytag v. Hurley Machine Company and Electric Household Utilities Corporation).

(Filed June 9, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Plaintiff, vs. EASY WASHING MACHINE CORPORATION, Defendant. — In Equity No. 75-202.

4304

THE MAYTAG COMPANY, a corporation, Plaintiff, vs. HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants. — In Equity No. 81-257.

4305

The issues in the above suits having duly come on to be heard by this Court at a Stated Term, the following Findings of Fact and Conclusions of Law are filed pursuant to Equity Rule No. 70-½.

FINDINGS OF FACT

1. Plaintiff, The Maytag Company, is the sole owner of the Snyder Letters Patent in suit No. 1,866,779, issued to it July 12, 1932, Claims 23,

26 and 29 of which are here asserted. Plaintiff's Exhibits 9, 10 and 11 are specimens of the machines made by the plaintiff which embody the structures shown in said patent.

2. Defendant, The Easy Company, is a corporation organized and existing under the laws of the State of Delaware and has an office and a regular and established place of business in the City of New York, State of New York within the Southern District of New York, where it committed the acts complained of in this suit.

3. The defendants, Hurley Machine Company and Electric Household Utilities Corporation are corporations existing under and by virtue of the laws of the State of Illinois, and each has a regular and established place of business in the City of New York, State of New York, in the Southern District of New York, where said corporations committed the acts complained of.

4. That the defendant, The Easy Company, subsequent to notice of alleged infringement of the Snyder patent in suit and before the filing of this suit, made and sold washing machines of which Plaintiff's Exhibit 3 is a specimen.

5. That after notice of alleged infringement of the Snyder patent and before the filing of this suit, defendants, The Hurley Company and Electric Household Utilities Corporation sold from their regular established place of business in New York washing machines of which Plaintiff's Exhibit 4 is a specimen.

4309

6. That by its opinion, rendered November 30, 1936, the Circuit Court of Appeals of the Second Circuit, in the suit of Plaintiff against The Brooklyn Edison Company held Claims 23, 26 and 38 of the said Snyder patent in suit anticipated by the prior art and invalid.

7. That the evidence offered by Plaintiff herein in support of its contention that a patentable invention is described and claimed in the Snyder patent in suit does not differ in substance from that which was submitted to the Court of Appeals in the said suit against The Brooklyn Edison Company.

4310

8. That the Snyder patent in suit is anticipated by the Davis patent No. 1,240,826, the Doughty & Davis patent No. 1,496,305, commercial machines made under said patents by the Nineteen Hundred Company of Binghamton, New York, known respectively as Form 1, Form 2, Form 3 and Form 4 machines, and the Jardine British patent No. 18,202 of 1891.

4311

CONCLUSIONS OF LAW.

1. Letters Patent No. 1,866,779 in suit are invalid as to Claims 23, 26 and 29 thereof.

2. The Bills of Complaint are dismissed with costs to the respective defendants.

ALFRED C. COXE,
United States District Judge.

New York, N. Y.,
Dated June 8th, 1937.

4312

Notice of Lodgment of Narrative Statement of the Evidence (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

4313	THE MAYTAG COMPANY, a corporation, Plaintiff-Appellant, vs. EASY WASHING MACHINE CORPORATION, Defendant-Appellee.	In Equity No. 75-202.
4314	THE MAYTAG COMPANY, a corporation, Plaintiff-Appellant, vs. HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants-Appellees.	In Equity No. 81-257.

Messrs. PENNIE, DAVIS, MARVIN & EDMONDS,
165 Broadway,
New York City.

Please take notice that on October 8th, 1937, we shall lodge with the Clerk of the Court the narrative statement of evidence, a copy of which has been previously handed you, as amended in

Notice of Lodgment of Narrative Statement of the Evidence (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

4315

accordance with the corrected pages handed you herewith.

We shall also file with the Clerk our praecipe, copy of which is attached herewith.

We shall present the narrative so amended to the District Court for approval on October 18th, 1937.

4316

WALLACE R. LANE,
Counsel for Plaintiff-Appellant.

Service of the foregoing Notice and receipt of a copy thereof and the corrections therein referred to acknowledged this 8th day of October, 1937.

PENNIE, DAVIS, MARVIN & EDMONDS,
Counsel for Defendants-Appellees.

4317

4318 **Order Approving Praecipe and Amending Narrative Statement of the Evidence (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).**

(Filed Nov. 6, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

4319 THE MAYTAG COMPANY, a corporation,
Plaintiff-Appellant,

vs.

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION,
Defendants-Appellees.

In Equity No. 81-257.

4320 This cause having come on to be heard upon the defendants-appellees' objections to plaintiff-appellant's Narrative Statement of Evidence as lodged, and upon defendants-appellees' praecipe in opposition to the praecipe filed by plaintiff-appellant, and counsel for the respective parties having been heard, it is

ORDERED, ADJUDGED AND DECREED:

1. That the Narrative Statement of Evidence as lodged on October 8, 1937, be amended in accordance with the defendants-appellees' objections and amendments filed October 16, 1937, excepting the following amendment:

Order Approving Praecipe and Amending Narrative Statement of the Evidence (Maytag Company v. Hurley Machine Company and Electric Household Utiliteies Corporation). 4321

"492, at the end of the page, insert Minutes of the Trial beginning with line 15 on page 150 through page 178-a, after making the following corrections in these Minutes:

Page 151, change "BEAUBIEN" to—JEFFERY—. 4322

Page 158, 3rd line from bottom, change "BEAUBIEN" to—JEFFERY—.

Page 169, lines 5 and 6, change "Davis" to—Snyder—.

Page 175, line 5, change "Snyder" to —the art—.

Page 176, 4th line from bottom, change "from" to—than—. 4323

Page 176, line 2 from bottom, change "a support for" to—as support for—.

2. That plaintiff-appellant's praecipe filed on October 8, 1937, be approved and defendant-appellee's counter-praecipe filed on October 16, 1937, be disapproved.

ALFRED C. COXE,
United States District Judge.

Dated: November 5th, 1937.

4324

Order Approving Narrative Statement of the Evidence (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation,

4325 Plaintiff-Appellant,

vs.

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION,

Defendants-Appellees.

In Equity No. 81-257.

The Narrative Statement of Evidence lodged by the plaintiff-appellant herein on October 8, 1937, and amended in accordance with my order

4326 of November 5th, 1937, is hereby settled, approved and allowed and is ordered filed as a statement of the evidence to be included in the record on appeal as provided by Equity Rule No. 75. Said statement of evidence, together with the exhibits therein referred to and the documents specified in the praecipe, constitute all of the evidence offered by the parties or considered by the Court in this case.

ALFRED C. COXE,
United States District Judge.

Dated: November 5th, 1937.

4327

Petition for Appeal (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Plaintiff, vs. HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants.	In Equity No. 81-257.

4328

The above named plaintiff, The Maytag Company, considering itself aggrieved by the final decree herein entered June 6, 1937, and filed in the office of the clerk of the United States District Court for the Southern District of New York on the same day, hereby appeals from said 4329 decree to the United States Circuit Court of Appeals for the Second Circuit for the reasons specified in the assignment of errors filed herewith, and prays that the appeal may be allowed and a Citation may be issued directed to the defendants, Hurley Machine Company and Electric Household Utilities Corporation, commanding them to appear before the United States Circuit Court of Appeals for the Second Circuit to do and receive what may appertain to justice in the premise; and that a transcript of the pleadings, proceedings, testimony, exhibits and orders

together with a copy of the opinion of this court, and the findings of fact and conclusions of law filed in this case, upon which said final decree was entered, duly authenticated by the clerk of the court, be transmitted to the United States Circuit Court of Appeals for the Second Circuit under the rule in such cases made and provided.

Plaintiff further prays that an order fixing the security to be given be made and that the same stay the execution for costs herein.

4331

THE MAYTAG COMPANY,
JOHN F. RYAN,
Solicitor.

By (Sgd.) WALLACE R. LANE,
of Counsel.

July , 1937.

Order Allowing Appeal.

4332

IT IS ORDERED this 14th day of July, 1937, that the foregoing appeal be allowed.

IT IS FURTHER ORDERED that the bond on appeal be fixed at the sum of Two Hundred and Fifty Dollars ($250.00) and act as a stay of the execution for costs herein.

HENRY W. GODDARD,
United States District Judge.

New York, N. Y.

4333

Assignment of Errors (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Plaintiff,

vs.

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants.

In Equity No. 81-257.

4334

Now comes the plaintiff, The Maytag Company, and in support of its petition for appeal from the final decree entered herein June 6, 1937, asserts as an assignment of errors that the Court erred in the following respects to-wit:

4335

1. In holding and decreeing that claims 23, 26 and 29 of United States Letters Patent No. 1,866,779 issued July 17, 1932, to The Maytag Company as assignee of Howard F. Snyder are invalid and in failing to hold that the said claims are good and valid in law.

2. In entering a decree dismissing the bill of complaint and in failing to find and decree that said patent is valid and infringed by defendants and that plaintiff is entitled to the relief prayed in the Bill of Complaint.

4336 *Assignment of Errors (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).*

3. In holding and decreeing that the defendants recover of the plaintiff its costs in this court.

4. In finding and holding that the evidence offered by plaintiff herein in support of its contention that a patentable invention is described and claimed in the Snyder patent in suit does
4337 not differ in substance from that which was submitted to the Court of Appeals in the suit of The Maytag Company against Brooklyn Edison Company and in failing to hold that such evidence required a finding of validity of said claims of said patent, and in not holding that in the present case the plaintiff offered evidence of substantially different character which if before the Court of Appeals in the Brooklyn Edison case, would have resulted in a decision holding the patent valid and infringed.

4338 5. In finding and holding that the Snyder patent in suit is anticipated by the Davis patent No. 1,240,826, the Doughty and Davis patent No. 1,496,305, the commercial machines made under said patent by the Nineteen Hundred Company, Binghamton, New York, known respectively as Form 1, Form 2, Form 3 and Form 4 machines, and the Jardine British patent No. 18,202 of 1891.

(Sgd.) WALLACE R. LANE,
of Counsel.

JOHN F. RYAN,
Solicitor for Plaintiff.

4339

Bond for Costs. (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

KNOW ALL MEN BY THESE PRESENTS:

That we, The Maytag Company, as principal and Continental Casualty Company, as surety, are held and firmly bound unto Hurley Machine Company and Electric Household Utilities Corporation in the full and just sum of Two Hundred Fifty ($250.00) Dollars to be paid to the said Hurley Machine Company and Electric 4340
Household Utilities Corporation, their attorneys, executors, administrators, or assigns; to which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, firmly by these presents. Sealed with our seals and dated this 16th day of July in the year of our Lord one thousand nine hundred and thirty-seven.

WHEREAS, lately at a session of the District Court of the United States for the Southern District of New York, in a suit pending in said 4341
Court, between The Maytag Company, plaintiff, and Hurley Machine Company and Electric Household Utilities Corporation, defendant, a decree was rendered against the said, The Maytag Company and the said The Maytag Company having obtained from said Court an order allowing an appeal to the United States Circuit Court of Appeals for the Second Circuit, and filed a copy thereof in the Clerk's Office of the said Court to reverse the decree of the aforesaid suit, and a citation directed to the said Hurley Machine Company and Electric Household Utili-

ties Corporation citing and admonishing them to be and appear at the United States Circuit Court of Appeals for the Second Circuit within thirty days from the date hereof.

Now, the condition of the above obligation is such, that if the said, The Maytag Company shall prosecute its said appeal to effect, and shall an-
4343 swer all damages and costs that may be awarded against it if it fail to make its plea good, then the above obligation to be void; otherwise to remain in full force and virtue.

Sealed and Delivered in
the presence of:

E. L. NELSON

THE MAYTAG COMPANY.
ROY A. BRADT (Seal)
Vice-President

4344

CONTINENTAL CASUALTY COMPANY (Seal)

INEZ MAGEE

By H. W. LAMP (Seal)
H. W. LAMP—Attorney-in-Fact.

Approved by:

_____

_____

4345

Citation (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

(Filed July 22, 1937.)

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

BY THE HONORABLE HENRY W. GODDARD, U. S. D. J.

4346

THE MAYTAG COMPANY,
a corporation,
Plaintiff,
vs.
HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION,
Defendants.

In Equity
No. 81-257.

THE UNITED STATES OF AMERICA, ss:

4347

To: HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION,

GREETINGS:

You are hereby cited and admonished to be and appear at a session of the United States Circuit Court of Appeals for the Second Circuit, to be holden in the United States Court House, Foley Square, New York, N. Y., thirty (30) days from the date hereof, pursuant to an appeal duly allowed and filed in the office of the Clerk of the District Court of the United States for the

Citation (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

Southern District of New York, from the final decree of said District Court of the United States for the Southern District of New York, which was entered in suit, In Equity No. 81-257, wherein The Maytag Company is Plaintiff-Appellant and you, the said Hurley Machine Company and Electric Household Utilities Corporation, are Defendants-Appellees, to show cause, if any there be, why the final decree rendered against the said plaintiff, The Maytag Company, in said suit, should not be corrected, and why speedy justice shall not be done to the parties in this behalf.

Witness the Honorable HENRY W. GODDARD, one of the Judges of the District Court of the United States for the Southern District of New York, this 20th day of July, in the year of our Lord, One Thousand Nine Hundred Thirty-seven, of the Independence of the United States, the One Hundred Sixty-second.

HENRY W. GODDARD,
United States District Judge.

Copy of the above citation received this 22nd day of July, 1937.

PENNIE, DAVIS, MARVIN & EDMONDS,
Solicitors for Defendants-Appellees.

4351

Praecipe (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY, a corporation, Appellant, vs. HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Appellees.	In Equity No. 81-257.

4352

TO THE CLERK OF THE UNITED STATES DISTRICT COURT, FOR THE SOUTHERN DISTRICT OF NEW YORK:

You are hereby requested to certify a transcript of record to be transmitted to the United States Circuit Court of Appeals for the Second Circuit pursuant to the appeal heretofore taken in this case, and include in said transcript the following: 4353

1. The Bill of Complaint filed October 21, 1935.
2. Order of March 19, 1936.
3. Amendment to Bill of Complaint filed March 21, 1936.
4. Answer to amended Bill of Complaint filed May 19, 1936.

4354 *Praecipe (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation).*

5. Second Amendment to Bill of Complaint filed March 2, 1937.
6. Stipulation filed April 22, 1937, re use of certain testimony and exhibits from the Brooklyn Edison case.
7. Decree filed June 9, 1937.
8. Findings of Fact and Conclusions of Law filed June 9, 1937, as corrected June 28,
4355 1937.
9. Notice of lodgment of narrative statement of evidence.
10. Condensed statement of the evidence including the testimony of plaintiff's witnesses:

Walter Bones
Lucien I. Yeomans and
Winton G. Wilks

given at the trial; the testimony of plain-
4356 tiff's witnesses:

George L. Miller
William J. Elliott (except recalled)
Joe Stephen
David L. Mooar
Roy A. Bradt
John E. Herbst
Charles V. Thornton and
Frederick F. Mason,

defendant's witnesses:

Watson A. Osgood and
Laura Wensley,

Praecipe (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation). 4357

stipulated from the cause entitled The Maytag Company vs. Brooklyn Edison Company, Inc., U. S. D. C., E. D. N. Y., Equity No. 6888; and the depositions of:

James A. McCoy
Ray L. Ryan
Gladys M. Ryan
Sherman H. Weeks
Esther S. Ryan
Chester F. Grober
Oscar George Beushausen
William W. Winger and
Fred L. Maytag,

4358

offered on behalf of the plaintiff and the depositions of:

Thomas W. Behan
George L. Davis
Robert D. Quinn
William Green
Vernon J. Wooster
Herman W. Doughty
William S. Miller
John N. Lint
Charles F. Jenkins
Walter H. Barnhart
Verne M. Barnhart
Harry E. Barnhart
Mary Carr and
George A. Haag,

4359

offered on behalf of the defendant and stipulated herein from the cause entitled The Maytag Company vs. Easy Washing

Machine Corporation, U. S. D. C., S. D. N. Y., Equity No. 75-202, stated in narrative form except such portions of the testimony as have been reproduced in the exact words of the witnesses at the desire of the parties or at the direction of the Court.

11. Order approving narrative statement of
4361 the evidence.

12. Plaintiff's Exhibits: 1, 2, 3A, 4A, 5, 9A, 10A, 11A, 12, 13A, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26 (pages 56, 57, 60 and 61), 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 47A, 51, 51A, 51B, 52, 53, 55, 56, 57, 58, 59, 60, 61, 62, 63 (pages 4, 7 and 10), 168, 170C, 170D, 171, 174, 175, 175A, 176, 177, 183, 184, 188, 209, 210, 211, 212.

13. Defendant's Exhibits: B, C, L, W, X, Y, Z (pages 53, 54 and 55), 1, 3, 5, 6, 7, 9, 10,
4362 11, 12, 13, 14, 15, 18, 19, 25, 61, 62, 63, 64, 65, 65, 66, 66, 67, 68, 69, 70, 81, 101, 102, 104, 105, 147.

14. Petition for appeal and order allowing appeal.

15. Assignments of Error.

16. Cost bond on appeal.

17. Citation.

18. This Praecipe.

19. Stipulation and Order as to Correctness of Record.

20. Clerk's Certificate.

Praecipe (Maytag Company v. Hurley Machine Company and Electric Household Utilities Corporation). 4363

The following exhibits shall be considered as physical exhibits and be transmitted as such to the Circuit Court of Appeals:

Plaintiff's Exhibits: 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 26, 48, 48A, 48B, 48C, 48D, 49, 50, 54, 63, 169, 170, 170A, 170B, 172, 172A, 173, 182.

4364

Defendant's Exhibits: A, D, M, Z, 2A, 4, 8, 16, 17, 20, 21, 22, 23, 24, 26, 27, 60, 67, 71, 72, 103.

WALLACE R. LANE,
Counsel for Plaintiff-Appellant.

Oct. 8, 1937.

JOHN F. RYAN,
Solicitor for Plaintiff-Appellant.

4365

The foregoing Praecipe for the Transcript of Record on Appeal is hereby approved by Defendant-Appellee.

Solicitor for Defendant-Appellee.

4366

Stipulation.

UNITED STATES DISTRICT COURT,

SOUTHERN DISTRICT OF NEW YORK.

THE MAYTAG COMPANY,
a corporation,
Plaintiff-Appellant,

vs.

4367 EASY WASHING MACHINE
CORPORATION,
Defendant-Appellee.

THE MAYTAG COMPANY,
a corporation,
Plaintiff-Appellant,

vs.

HURLEY MACHINE COMPANY and
ELECTRIC HOUSEHOLD UTILITIES
CORPORATION,
4368 Defendants-Appellees.

It is hereby stipulated and agreed, that the foregoing (in 3 vols.) is a true transcript of the record of the said District Court in the above-entitled matter as agreed on by the parties.

Dated, January , 1938.

JOHN F. RYAN,
Solicitor for Plaintiff.

PENNIE, DAVIS, MARVIN & EDMONDS,
Solicitors for Defendants.

Clerk's Certificate.

4369

UNITED STATES OF AMERICA, }
Southern District of New York, } ss.:

THE MAYTAG COMPANY,
a corporation,
Plaintiff-Appellant,
vs.
EASY WASHING MACHINE
CORPORATION,
Defendant-Appellee.

4370

THE MAYTAG COMPANY,
a corporation,
Plaintiff-Appellant,
vs.
HURLEY MACHINE COMPANY and
ELECTRIC HOUSEHOLD UTILITIES
CORPORATION,
Defendants-Appellees.

4371

I, CHARLES WEISER, Clerk of the District Court of the United States of America for the Southern District of New York, do hereby Certify that the foregoing (in 3 vols.) is a correct transcript of the record of the said District Court in the above-entitled matter as agreed on by the parties.

In testimony whereof, I have caused the seal of the said Court to be hereunto affixed, at the City of New York, in the Southern District of New York, this day of January, in the year of our Lord one thousand nine hundred and thirty-eight and of the Independence of the said United States the one hundred and sixty-second.

CHARLES WEISER,
(Seal) Clerk.

[fol. 1458] UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT, OCTOBER TERM, 1937

Argued March 11, 1938. Decided April 4, 1938

Nos. 230, 231

THE MAYTAG COMPANY, Plaintiff-Appellant,

v.

EASY WASHING MACHINE CORPORATION, Defendant-Appellee

THE MAYTAG COMPANY, Plaintiff-Appellant,

v.

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants-Appellees

Appeals from the District Court of the United States for the Southern District of New York

Before Manton, L. Hand, and Augustus N. Hand, Circuit Judges.

Suit for infringement of patent No. 1,866,779. Decrees were entered dismissing the bills of complaint. Plaintiff appeals. Decrees affirmed.

Wallace R. Lane, of Chicago, Ill., Oscar W. Jeffery, of New York City, and Clarence J. Loftus, of Chicago, Ill., for appellant.

William H. Davis and Dean S. Edmonds, both of New York City, George I. Haight, of Chicago, Ill., Charles W. Riley, of New York City, and Edgar F. Beaubien, of Chicago, Ill., for appellees.

MANTON, Circuit Judge:

These suits are for infringement of patent No. 1,866,779 for a gyrator type of washing machine. We held this patent invalid as to claims 23[1] and 26;[2] also, claim 30, for a method

[1] 23. A washing machine comprising in combination, a tub for containing cleansing liquid and materials to be cleansed, said tub having a bottom portion and an upwardly extending wall portion, the interior surface of which is free from rub-

[fol. 1459] claim, in our determination of a suit in Maytag Co. v. Brooklyn Edison Co., Inc., 2 Cir., 86 F. 2d 625. In

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bing projections, a rotary reciprocatory impeller mounted in the tub adjacent its bottom, having a base and plurality of blades, each of which is of substantial height and lateral area, and a central portion projecting upwardly from the base, the upper surface area of the base being considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion, the margin of said base being spaced a substantial distance away from the upwardly extending portion of the tub, said tub and impeller being so constructed and positioned relative to each other that when the impeller is rapidly reciprocated each blade and its adjacent portion of the impeller base will simultaneously drive the cleansing fluid in one and then an opposite outward upward circulatory direction toward and around the clothes, and act in cooperation with the interior of the tub to cause violently flowing opposed currents of liquid to meet and flow inwardly and downwardly toward the central portion of the tub, and substantially suspend the materials in the fluid while being washed, a rotary reciprocating drive shaft extending upwardly through the bottom of the tub into the interior thereof for supporting the impeller for movement in a fixed plane, and power means for rapidly reciprocating the shaft and impeller for the purposes set forth.

[2] 26. In a washing machine for cleaning fabrics by forcing cleansing fluid through them while substantially suspended by the action of the fluid, as distinguished from pulling or pushing the fabrics through the fluid or against scrubbing surfaces or otherwise scrubbing them by mechanical means, a tub, a substantially imperforate rotary reciprocatory impeller mounted to operate in a fixed plane having blades of substantial height and area projecting therefrom in a direction toward the fabrics while they are so constructed and arranged as to cooperate while the impeller is in operation for whipping the fluid and violently forcing it outwardly, upwardly and in a general vertical and circulatory movement and circumferentially of the tub first in one and then in an opposite direction and through and around the materials, and substantially suspending the materials in the fluid while being washed, and power means for rapidly reciprocating the impeller.

addition to these claims (23 and 26), claim 29[3] is here in suit.

Claim 29 defines the washing machine of the patent in the same language as claim 26. It differs from claim 26 in that the impeller is expressly stated to be mounted adjacent to the bottom of the tub. In claim 23 of the patent, as in claim 26, the washing machine elements are said to be so constructed and positioned as to bring about the characteristic movement of the contents of the tub. Claim 23 differs from claim 26 in that the impeller is said to be "mounted in the tub adjacent its bottom," the upper surface area of the base is said to be "considerably less than the horizontal cross section area of the tub," and the margin of the base is said to be spaced "a substantial distance" away from the upwardly extending portion of the tub and the impeller is specifically described with reference to its shape and the nature of the impelling action. The limitation "mounted adjacent the bottom of the tub" is found in claim 23.

Since our decision in Maytag Co. v. Brooklyn Edison Co., Inc., supra, Judge Otis of the District Court for the Western District of Missouri has rendered a decision (Maytag Co. v. General Electric Supply Corporation, — F. Supp. —) contrary to our views, holding the claims here in suit valid

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[3] 29. In a washing machine, a tub adapted to contain cleansing liquid and materials to be cleansed, a rotary reciprocatory impeller mounted adjacent the bottom of the tub, comprising a substantially imperforate base of substantial height and lateral area projecting from the body of the impeller toward the materials while being washed, said impeller and tub being so constructed and arranged that they will cooperate, when the impeller is rapidly reciprocated, to cause the liquid to be positively forced outwardly, upwardly and circumferentially along the interior of the tub in one general direction, and then outwardly, upwardly and circumferentially along the tub in the opposite general direction, whereby the materials being washed will be cleansed, the change in direction of movement of the impeller being accomplished suddenly and forcibly to whip the liquid and vigorously force it first in one direction and then in the opposite direction through and around the materials while substantially suspended therein by the action of the liquid, and power means for rapidly reciprocating the impeller.

and infringed. In that decision he expressed a willingness "to make some contribution to the final decision," but, upon examination of what he wrote, we discover no contribution to cause us to change the views expressed in the previous litigation in this circuit as to the invalidity of this patent.

After a full oral argument, a study of the new briefs submitted by the appellant, and after observing a demonstration of the machines, we are of the view that our former determination was correct. We must therefore affirm the decrees and do so upon the authority of Maytag Co. v. Brooklyn Edison Co., supra.

Decrees affirmed.

[fol. 1460] UNITED STATES CIRCUIT COURT OF APPEALS, SECOND CIRCUIT

At a Stated Term of the United States Circuit Court of Appeals, in and for the Second Circuit, held at the United States Court House, in the City of New York, on the 11th day of April, one thousand nine hundred and thirty-eight.

Present: Hon. Martin T. Manton, Hon. Learned Hand, Hon. Augustus N. Hand, Circuit Judges.

THE MAYTAG COMPANY, Plaintiff-Appellant,

vs.

EASY WASHING MACHINE CORPORATION, Defendant-Appellee

Appeal from the District Court of the United States for the Southern District of New York

This cause came on to be heard on the transcript of record from the District Court of the United States for the Southern District of New York, and was argued by counsel.

On Consideration Whereof, it is now hereby ordered, adjudged, and decreed that the decree of said District Court be and it hereby is affirmed with costs.

It is further ordered that a mandate issue to the said District Court in accordance with this decree.

Wm. Parkin, Clerk.

[fol. 1461] [Endorsed:] United States Circuit Court of Appeals, Second Circuit. The Maytag Company vs. Easy Washing Machine Corporation. Order for mandate. United States Circuit Court of Appeals, Second Circuit. Filed Apr. 11, 1938. William Parkin, Clerk.

[fol. 1462] UNITED STATES CIRCUIT COURT OF APPEALS, SECOND CIRCUIT

At a stated term of the United States Circuit Court of Appeals, in and for the Second Circuit, held at the United States Court House, in the City of New York, on the 11th day of April, one thousand nine hundred and thirty-eight.

Present: Hon. Martin T. Manton, Hon. Learned Hand, Hon. Augustus N. Hand, Circuit Judges.

THE MAYTAG COMPANY, Plaintiff-Appellant,

vs.

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants-Appellees

Appeal from the District Court of the United States for the Southern District of New York

This cause came on to be heard on the transcript of record from the District Court of the United States for the Southern District of New York, and was argued by counsel.

On Consideration Whereof, it is now hereby ordered, adjudged, and decreed that the decree of said District Court be and it hereby is affirmed with costs.

It is further ordered that a mandate issue to the said District Court in accordance with this decree.

Wm. Parkin, Clerk.

[fol. 1463] [Endorsed:] United States Circuit Court of Appeals, Second Circuit. The Maytag Company vs. Hurley Machine Company and another. Order for mandate. United States Circuit Court of Appeals, Second Circuit. Filed Apr. 11, 1938. William Parkin, Clerk.

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[fol. 1479] UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT

THE MAYTAG COMPANY, Plaintiff-Appellant, Petitioner,

against

EASY WASHING MACHINE CORPORATION, Defendant-Appellee

THE MAYTAG COMPANY, Plaintiff-Appellant, Petitioner,

against

HURLEY MACHINE COMPANY and ELECTRIC HOUSEHOLD UTILITIES CORPORATION, Defendants-Appellees

Before Manton, L. Hand and A. N. Hand, Circuit Judges

Wallace R. Lane, Oscar W. Jeffery, Clarence J. Loftus, Counsel for Petitioners.

Per CURIAM:

Petition for rehearing denied.

—— ——, Circuit Judges.

Filed April 21, 1938.

[fol. 1480] UNITED STATES CIRCUIT COURT OF APPEALS, SECOND CIRCUIT

At a stated term of the United States Circuit Court of Appeals, in and for the Second Circuit, held at the United States Court House, in the City of New York, on the 21st day of April, one thousand nine hundred and thirty-eight.

Present: Hon. Martin T. Manton, Hon. Learned Hand, Hon. Augustus N. Hand, Circuit Judges.

1479

THE MAYTAG COMPANY, Plaintiff-Appellant

vs.

EASY WASHING MACHINE CORPORATION, Defendant-Appellee

SAME, Plaintiff-Appellant,

vs.

HURLEY MACHINE COMPANY and Another, Defendant-Appellee

A petition for a rehearing having been filed herein by counsel for the plaintiff;

Upon consideration thereof, it is

Ordered that said petition be and hereby is denied.

Wm. Parkin, Clerk.

[fol. 1481] [Endorsed:] United States Circuit Court of Appeals, Second Circuit. The Maytag Company vs. Easy Washing Machine Corpn. (and another case). Order. United States Circuit Court of Appeals, Second Circuit. Filed Apr. 21, 1938. William Parkin, Clerk.

[fol. 1482] UNITED STATES OF AMERICA,
Southern District of New York:

I, William Parkin, Clerk of the United States Circuit Court of Appeals for the Second Circuit, do hereby certify that the foregoing pages, numbered from 1 to 1481, inclusive in 3 volumes, contain a true and complete transcript of the record and proceedings had in said Court, in the case of The Maytag Company, Plaintiff-Appellant, vs. Easy Washing Machine Corporation, Defendant-Appellee; The Maytag Company, Plaintiff-Appellant, vs. Hurley Machine Company and Electric Household Utilities Corporation, Defendants-Appellees, as the same remain of record and on file in my office.

In Testimony Whereof, I have caused the seal of the said Court to be hereunto affixed, at the City of New York, in the Southern District of New York, in the Second Circuit, this eighteenth day of May, — in the year of our Lord one thousand nine hundred and thirty-eight, and of the Independence of the said United States the one hundred and sixty-second.

Wm. Parkin, Clerk. (Seal United States Circuit Court of Appeals, Second Circuit.)

SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1938

No. 76

ORDER ALLOWING CERTIORARI—Filed February 6, 1939

On Petition for Writ of Certiorari to the United States Circuit Court of Appeals for the Second Circuit

A motion for leave to file a petition for rehearing and petition for rehearing having been filed in this case;

Upon consideration thereof, it is ordered by this Court that the said motion for leave to file and petition for rehearing be, and the same are hereby, granted.

And it is further ordered that the order denying certiorari be, and the same is hereby, vacated; and that the petition for writ of certiorari herein be, and the same is hereby, granted.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1938

No. 77

ORDER ALLOWING CERTIORARI—Filed February 6, 1939

On Petition for Writ of Certiorari to the United States Circuit Court of Appeals for the Second Circuit

A motion for leave to file a petition for rehearing and petition for rehearing having been filed in this case;

Upon consideration thereof, it is ordered by this Court that the said motion for leave to file and petition for rehearing be, and the same are hereby, granted.

And it is further ordered that the order denying certiorari be, and the same is hereby, vacated; and that the petition for writ of certiorari herein be, and the same is hereby, granted.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.